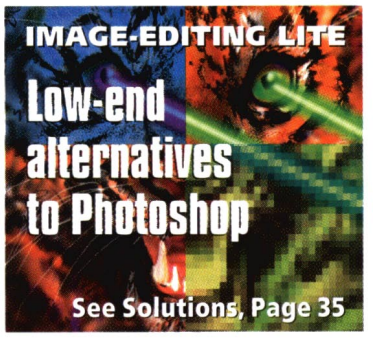
MacWEEK



04.08.96 *The Newsweekly for Macintosh Managers* VOLUME 10 NUMBER 14

Speedy Reply boards put Pentiums on PCI

By Henry Norr

Reply Corp., for two years Apple's partner in marketing DOS compatibility cards, is about to step out on its own with a new series of Pentium models for PCI Macs.

Called DOS on Power Mac PCI, the new cards will be offered with Pentium processors ranging in speed from 100 to 200 MHz. A Mac-compatible DIMM (dual in-line memory module) socket will support up to 128 Mbytes of dedicated dynamic RAM, while a SIMM socket will accept a Level 2 cache. An add-on module will provide serial and parallel ports and SoundBlaster-compatible audio.

Yet another option, the Reply NetPack, will add support for Ethernet and token-ring networking, including software that will enable users to establish simultaneous network connections under different TCP/IP ad-

See Reply, Page 70

Jaz plays beautiful music in removable storage gig

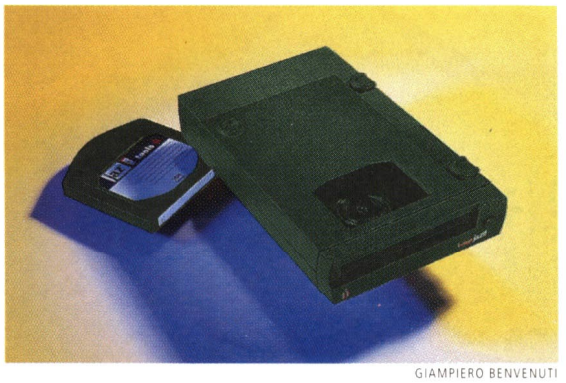
By Dale Coleman

When we tested a preproduction unit of Iomega Corp.'s new Jaz drive last January, we predicted that the 1-Gbyte removable-cartridge drive would be a winner. Now that it's finally shipping, **REVIEW** we're happy to report that Iomega has delivered on our prediction. The Fast SCSI-2 device shares the best features of Iomega's phenomenally successful Zip drive while avoiding the worst.

The external Jaz drive is small (less than 8.5 by 5.5 by 1.5 inches); lightweight (less than 2 pounds); includes very good software; and is inexpensive, with an estimated street price of $599 for a drive and one cartridge and $99 (in five-packs) for additional 1-Gbyte cartridges.

Volume shipment, according to Iomega, will start slowly and won't reach full stride until sometime later this spring. That implies a lot of back orders,

See Iomega, Page 25



GIAMPIERO BENVENUTI

Iomega's Jaz drive packs 1 Gbyte of data onto sturdy and compact 3.5-inch disks. It offers convenient mass storage with impressive performance.

NEWSPAPER SECOND CLASS

Mac quality concerns challenge new QA czar

Longtime users angry at Apple

By Joanna Pearlstein and Kelly Ryer

As Apple struggles to heal its bruised image, the company is facing a battle on a long-stable front: retaining its loyal user base.

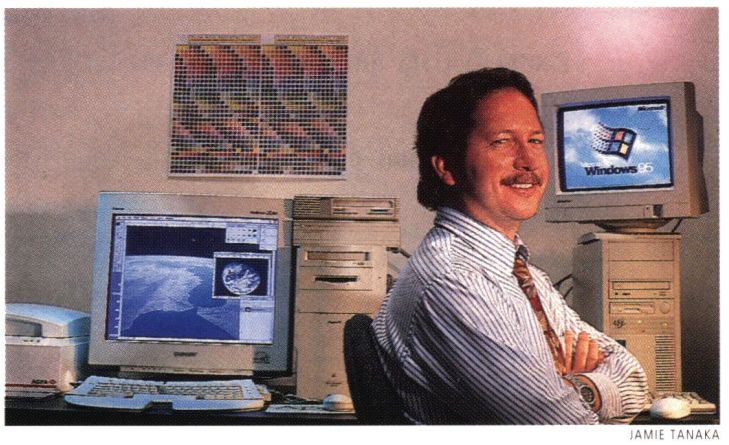
A host of problems with recent Apple hardware and system software have led some longtime Mac users to question the quality of Apple products. In response to this, the company has organized a team around Frederick Forsyth, Apple senior vice president for worldwide operations, to address software and hardware quality concerns.

Users facing problems with the Power Mac 7200/90, Performa 5215 and 6300, PowerBook 5300 series, AppleVision 1710AV monitor, Open Transport, and System 7.5.3 contend that current Apple products have far more problems than in the past, and some suggest that Apple's commitment to quality assurance has eroded.

David German, manager of the city of San Francisco's central reproduction and mail site, said he was "very disturbed and angry" about Apple's quality control.

"The hardware we've purchased has been buggy and faulty. ... This is like being in the DOS world. I've never purchased anything other than Mac equipment until recently, and now I'm ques-

See Quality, Page 70



JAMIE TANAKA

Faced with bugs and faulty Apple equipment, users like David German are threatening to turn their backs on the Macintosh.

The 'I' was for Internet at N+I network show

By Clifford Colby

Las Vegas — Although the buzzwords "Internet" and "intranet" seemed to pepper each presentation at last week's Networld+Interop 96, the show floor itself was salted with more down-to-earth networking and communications products.

Bill Gates used his opening keynote address at the show here to talk about Exchange, his company's long-awaited e-mail and groupware application. The chairman and CEO of Microsoft Corp. of Redmond, Wash., said the Windows NT server portion of the software, after six years in development, was finally available, as

See N+I, Page 72

NEWS ANALYSIS

Insider memo stirs debate

By James Staten

If there is such a thing as beta testing ideas in public, Apple has it down to a science.

Both The Wall Street Journal and The New York Times made news out of an anonymous internal message describing CEO Gilbert Amelio's musings on Mac development. And Mac users jumped at the opportunity to respond to the memo, which was published on-line.

In pursuit of inside info, Apple CEO Gilbert Amelio is meeting with the rank and file.

Apple Fellow Guy Kawasaki started the fuss March 31 when he posted to his Internet mailing list an item that detailed a meeting between Amelio and a small group of non-management Apple employees. Written by one of 12 attendees randomly selected to meet with their new boss, the message portrays an employee who was very encouraged by what he heard.

Most notable from the memo was the concept Amelio had touted to Apple's board and a select group of third-party developers earlier in March, which was to view the Macintosh as the MagLite of computers. MagLites are durable, high-end

See Memo, Page 70

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IMAGING MAGAZINE

Vertex 2.6 GB Best Performer Award April 1996

MacWEEK

04.08.96 VOLUME 10 NUMBER 14

4 UP FRONT

More layoffs at DayStar • MetaTools cooks up Goo for image editing • MovieStar Maker speeds on-line QuickTime • Apple cuts dealer prices on Power Macs

6 NEWS

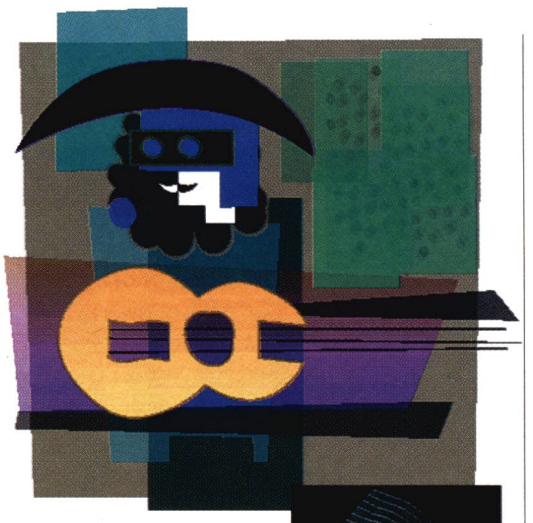
QuicKeys 3.5 to get make-over • WEST beefs up testing for education server • Pioneer CD player to hit 10x speed • DesAcc app handles tech images • Territory Manager goes native

10 GA

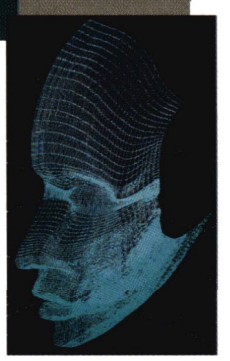
Wired heats up MPEG with Butane II PCI card • mBED makes quick work of Web animation • LightningDraw strikes for GX-based graphics • mFactory tunes up mTropolis

16 GATEWAYS

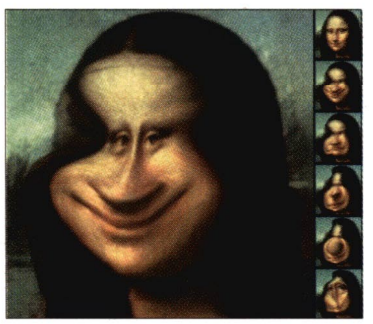
Symantec C++ 8.0 Release 5 builds Java, Pascal, 680x0 apps • Breeze blows into Mac wireless networking • Engst on avoiding OT hassles • How many hits does your Web server get?



Drawing conclusions: The first graphics app based on the QuickDraw GX imaging architecture is finally ready for users. See GA, Page 10.



Reason to smile: MetaTools' latest image-editing app will let users export, morph and more. See Up Front, Page 4.



It's quirky, but the Amapi 3-D modeler offers features not found elsewhere. See Reviews, Page 26.

25 REVIEWS

Iomega's Jaz drive sets standard for large-volume removable cartridges • Lotus cc:Mail 3.0 for Mac finally reaches par with PCs • Yonowat Amapi 3-D app cheers some users • In Brief: Specular TextureScape 2.0 • Forum

35 SOLUTIONS

Some users prefer low-end image-editing programs for the economy and ease of use.

DEPARTMENTS & OPINION

16 Working the Net
22 Editorial
22 Second Decade
23 Letters
23 Mac Manager
35 MacInTouch
72 StockWatch
74 Mac The Knife

ALSO INSIDE

37 Mail Order
53 MarketPlace
73 Advertiser Index
73 Product Index

MACWEEK INSIDER CAROLYN SAID

Round 2 in the drive fight

Why not a gigabyte?

Almost a year ago, I asked that question in a column criticizing SyQuest Technology Inc. for its too-little, too-late response to Iomega Corp.'s Zip drive. Instead of the EZ135, its Zip competitor, I suggested that SyQuest try to leap ahead in storage with a 1-Gbyte removable drive. At the time, that seemed like shooting for the moon.

But time zooms by in the computer world. Now, in a replay of the Zip vs. EZ135 scenario, Iomega has once again claimed higher ground with the Jaz, a 1-Gbyte removable-cartridge drive that MacWEEK Editor at Large Dale Coleman gave a five-diamond rating in his evaluation this week (see review, Page 1).

SyQuest initiated a flurry of publicity about its upcoming Jaz competitor, the 1.3-Gbyte SyJet, but has lately grown quiet. The removable SyJet was supposed to ship last month. We're waiting, SyQuest.

Why did we give the Jaz drive our highest rating? Coleman, who has been living, breathing and eating drive minutia over the past nine months, says the Jaz stands out as a truly innovative product that is clearly tops in a new and useful category.

Like the early Macintosh, he says, it's the kind of product that makes people fall in love. Even though those first Macs were quirky little boxes, their peculiar combination of characteristics had a strong appeal. The Jaz, while mercifully lacking the quirkiness, aces the performance, reliability, ease-of-use and capacity check marks and also has an ineffable quality that appeals to users tired of storage hassles.

As Coleman writes: "The ideal removable mass-storage solution would be as fast, reliable and capable as a standard hard drive, yet as easy to use and as durable as a floppy disk. The Jaz drive isn't perfect, but it comes closer to this ideal than any of the alternatives."

Our rating reflects performance in simulated real-life situations. However, there's one real-life situation that we can't simulate: manufacturing. While we're enthusiastically endorsing the Jaz for its technology and performance, we can't predict how quickly (or slowly) Iomega will ramp up to meet demand.

The company is still dealing with back orders for the Zip, 12 months after its release.

Iomega offered the Jaz first through OEM vendors, such as FWB Inc. and MicroNet Technology Inc., in effect trying to trickle it to market. Newsgroup discussions of the new drive center on how to get one.

The Jaz has a quality that appeals to users tired of storage hassles.

I hope Iomega's stellar technological achievement with the Jaz isn't soured by yet another inability to meet demand. Along similar lines, SyQuest has been struggling with its own manufacturing and financial woes this year, no doubt the reason that the SyJet lags. In fact, you could build an entire business-school course around the steps and missteps of Iomega and SyQuest.

Iomega, a company with its back against the wall, decided to do something unusual a couple of years ago: Figure out what its customers really wanted, not what its engineers could most easily bring to market. Both the Zip and Jaz respond to major trends — the ballooning of file sizes; the increasing use of color publishing, multimedia and digital video; and the need for easy backup systems.

SyQuest also decided to pay better attention to its customers — after it noticed them lining up at Iomega's door.

Don't get me wrong, I'm all for healthy competition that results in companies leapfrogging each other with better and better products. I truly hope that the SyJet turns out to be a five-diamond product as well, not a me-too solution to forestall customers from switching to a competitor. We reserve our highest rating for products that transcend existing technology and gracefully fulfill important user needs. The more companies, in mass storage or any other area, that can achieve that, the better. □

Carolyn Said, executive editor/reviews and features, welcomes feedback at carolyn_said@macweek.com.

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DayStar cuts clone staff

Upgrade prices also slashed

By David Morgenstern and James Staten

Following on the heels of a March staff cut, DayStar Digital Inc. last week again announced layoffs, this time affecting the company's Mac clone operation.

The company said it laid off 15 to 20 people, bringing the combined layoff to more than a third of the work force. The 16 positions eliminated earlier came from DayStar's lagging accelerator-card business (see 03.25.96, Page 4).

The company now employs about 50, down from 89 a month ago, DayStar said.

CEO Andrew Lewis said additional staff cuts were needed because the market is soft for the company's Genesis line of multiprocessor Macintosh clones. "We're scaling down to wait it out," he said. The company will continue to engineer and ship new products, he said.

In other news, DayStar recently cut $400 from its PowerPC upgrades for 68030-based Macs.

Now $499, the Turbo 601 board houses a 66-MHz PowerPC 601 processor and takes advantage of the computer's existing on-board memory. Three models of the Turbo 601 are available: one for the IIci; one for the IIsi; and a third for the IIvi, IIvx and Performa 600-series machines.

DayStar Digital Inc. of Flowery Branch, Ga., can be reached at (770) 967-2077 or (800) 972-8711; fax (770) 967-3018; http://www.daystar.com. □

Tangled up in Goo: MetaTools' new program will use a variety of tools to deform images. Sources said its simple interface is aimed at consumers.

MetaTools stirs up editing with Goo

By Kelly Ryer

MetaTools Inc., developer of graphics-manipulations tools such as Kai's Power Tools and KPT Bryce, is preparing to do it again. According to sources, the Carpinteria, Calif.-based company is developing an image-editing program code-named Funny Face, but tentatively to be marketed as Kai's Power Goo.

Sources said Kai's Power Goo will ship on a CD-ROM that will include hundreds of images covering categories such as children, politicians and animals. Power Goo users will reportedly be able to nudge, smudge, twirl, stretch and airbrush an image. They will also be able to undo these changes selectively by brushing over specific regions.

Kai's Power Goo will reportedly create morphing animations by providing additional frames between user-set keyframes.

Sources said the software will retail for about $70, although pricing has not yet been set.

While the commercial standalone version of the product will not arrive until this summer, sources said, limited versions of the program will soon be bundled with digital cameras and scanners from OEMs.

According to sources, Kai's Power Goo will give users of these OEM products some basic image-editing capabilities to clean or alter images, such as sharpening and contrast controls. The program will reportedly be capable of editing images in a resolution-independent mode and exporting those images at several different resolutions.

MetaTools executive Kai Krause offered sneak previews of the product at March's CeBIT '96 in Hanover, Germany. Sources described the interface as being consumer-oriented, with simplified tools and commands.

MetaTools declined to comment. □

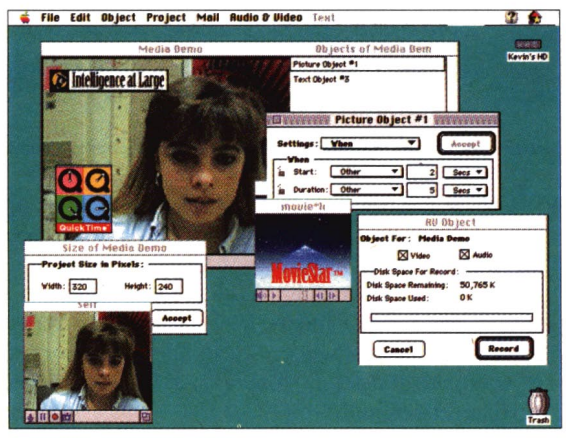
MovieStar Maker ready for close-up

By Rebecca Gulick

Seeking a role in the growing Internet animation market, Intelligence at Large Inc. this week will debut MovieStar Maker, a tool for putting QuickTime sequences on the Web.

MovieStar Maker is a QuickTime authoring application that creates audio and video files that can be streamed from a Web server. The new package will include a plug-in for Netscape Navigator 2.0 or Microsoft Corp.'s Internet Explorer.

Users can create QuickTime movies, multipart MIME (Multipurpose Internet Mail Extensions) files or streaming movies for Web servers by dragging and dropping movies, pictures, text, audio, graphics or MIDI documents.



MovieStar Maker lets QuickTime producers incorporate video, sound and images by dragging and dropping them from other programs. Users can also add transition effects.

According to the company, the MovieStar Plug-In for Navigator lets users view QuickTime data as it is being downloaded. With the plug-in, users can also view embedded movies created by other applications; when non-MovieStar movies are opened by MovieStar Maker, they can be saved as streaming movies, according to the company.

Barry Cohen, owner of Barry Cohen Productions of Fort Lauderdale, Fla., uses MovieStar Maker to post video sequences of aerial views of boats and waterfront property on the company's Web site.

According to Cohen, MovieStar Maker is the easiest QuickTime tool he's ever used. He said the program made it easy to integrate other types of production tools, such as Specular International Ltd.'s LogoMotion.

MovieStar Maker can be downloaded from Intelligence at Large's Web site at http://www.beingthere.com. The software lists for $149.95, but users can purchase it for $39.95 until June 1.

Intelligence at Large Inc. of Philadelphia can be reached at (215) 387-6002; fax (215) 387-9215; info@beingthere.com. □

OS update free

Modemless Mac owners can now update their system software without pulling out their credit cards.

Apple announced last week that until May 31, it will mail free floppy disk or CD-ROM versions of System 7.5 Update 2.0 to anyone who requests it.

U.S. customers can order the update by calling (800) 293-6617, Ext. 984; users in Canada can call (800) 361-6075.

Updates by mail will return to their $13 price after the May deadline. □

Power Mac 7200, 8500 now cost less

Models' price tags plummet by $400

By Joanna Pearlstein

Apple recently cut dealer prices on two Power Mac models, a move sources said may pave the way for the faster models expected later this month.

The prices on the Power Mac 7200/75 and 8500/120 dropped by about $400 each in late March, according to dealers. However, Apple denied it had cut prices, explaining that dealers can set their own price tags on retail models.

Still, sources said the price cuts had come from Apple and said they expect more cuts in coming weeks in preparation for the "speed bump" machines reportedly due near the end of April (see 03.11.96, Page 1).

Many dealers are selling Power Mac 7200/75 models with 8 Mbytes of RAM and a 500-Mbyte hard drive for about $999, down from $1,399. Similarly, some dealers are selling Power Mac 8500 systems with 16 Mbytes of RAM and a 1-Gbyte hard drive for $3,400, down from $3,800.

Dealers speculated that Apple cut prices to move products that weren't selling well out of inventory.

One dealer said that before the price cut, "No one was buying the 7200/75 because the price of the 7200/90 was so close." Now, the dealer said, those systems are selling well. □

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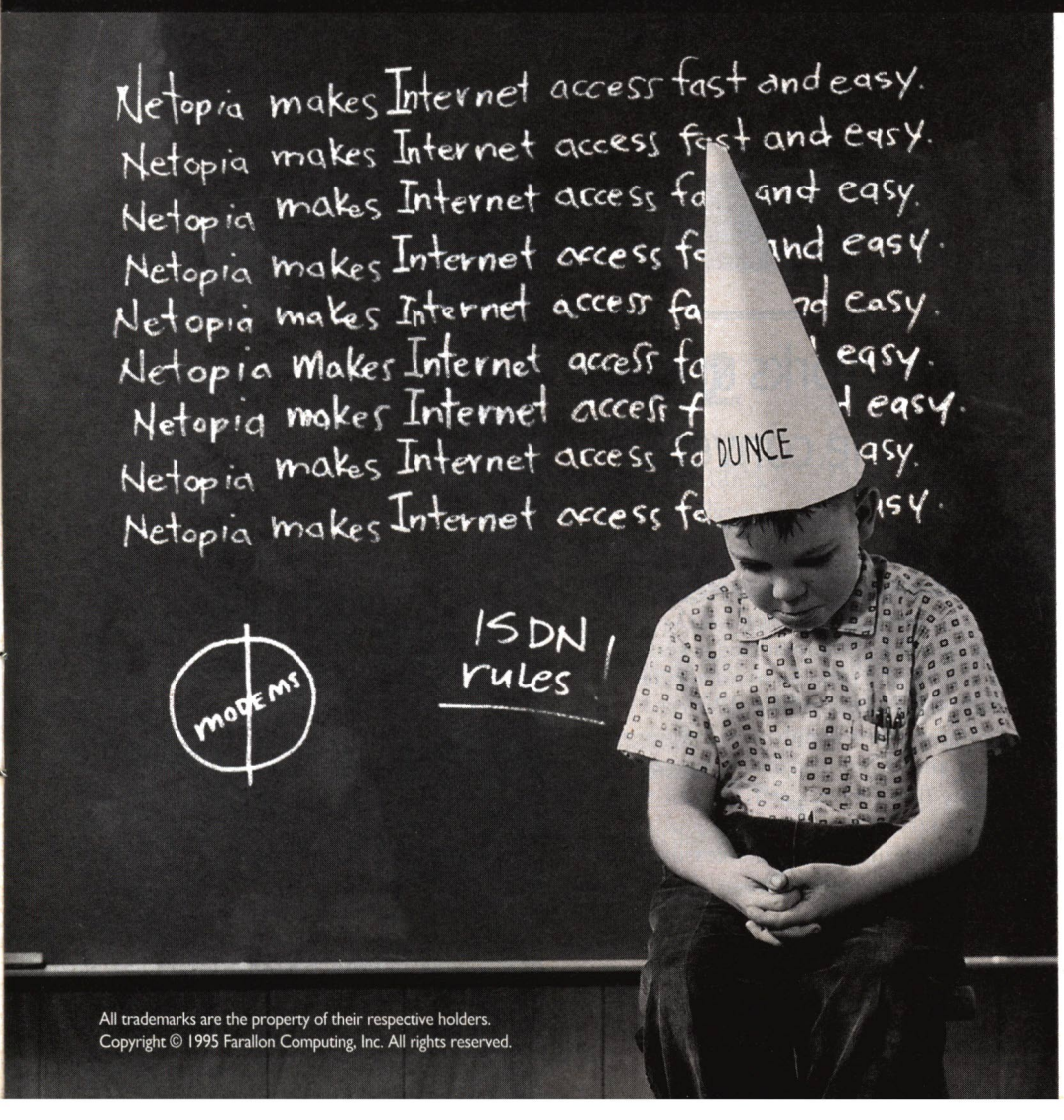
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QuicKeys revamped

Batch processing, tabs to star in Version 3.5

By Joanna Pearlstein

Bringing its QuicKeys macro utility up-to-date, CE Software Inc. will add a new interface and batch processing this summer.

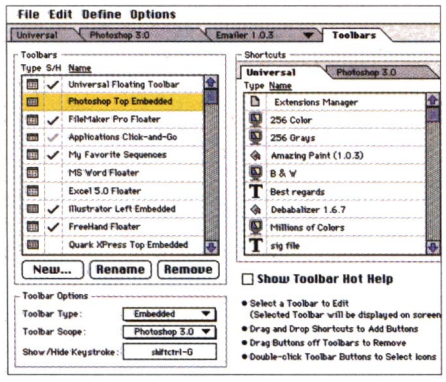
Version 3.5 will introduce a tab interface to the $119 QuicKeys, which was last updated in 1993. Each tab will represent a set of shortcuts common to one application.

In addition, the utility will provide new ways to access shortcuts. It will let users create application-specific tool bars as well as customize a universal tool bar.

Version 3.5 will also offer floating palettes of shortcuts as well as Click-and-Go, a new floating list that is invoked with its own key combination.

A new batch processing capability will let users execute a shortcut on a collection of files. "This functionality is what we've been just dying for," said Chris Schmalz, senior technical support specialist at Macmillan Computing Publishing of Indianapolis.

According to CE, the update will improve the editor for recorded sequences and let mobile users add different phone settings to shortcuts.



Quashing rumors of the demise of QuicKeys, CE will release Version 3.5, which will add a tab interface and a batch processing tool.

Expected to ship by the end of June, 680x0 upgrades from Version 3.0 will cost $35.95. A Power Mac-native update is expected to ship in the third quarter.

CE Software Inc. of West Des Moines, Iowa, can be reached at (515) 221-1801 or (800) 523-7638; fax (515) 221-1806; sales@cesoft.com; http://www.cesoft.com. □

Education servers look WEST

By David Morgenstern

Web Educational Support Tools Ltd. in May will update its Web server software aimed at the education and corporate training markets. The software will let teachers distribute HTML course materials and test students over a network.

Version 1.1 of the Mac-based WEST Desktop Education Server will use a new integrated database engine that offers two to three times the performance of the previous version, the company said. WEST said it expects to release Unix and Windows NT versions in June.

The update will create tests with multiple-choice and fill-in-the-blank questions; teachers can assign different points to various words entered by students, WEST said. It will also generate tests with questions randomly drawn from a list.

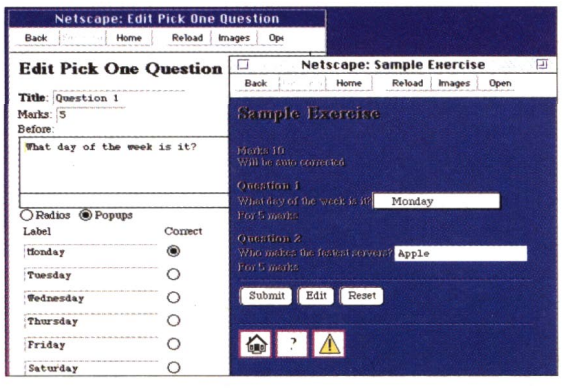
The server will grade the tests automatically and display the outcome or a message from the teacher. It will also track each student's progress.

Boosting its distribution capabilities, the update will gather all local text, graphics and multimedia files for a course into a single file, which can then be placed on a CD-ROM or new server. It will manage links and structure automatically, the company said.

Previously confined to a single layer, the new version will let courses, or chapters, include multiple pages of content and exercises as well as let students join multiple classes.

WEST's servers are accessed and managed via Web browsers. Instead of directing students to a set of static pages, the server can customize pages for each student. It also offers e-mail and conferencing capabilities.

WEST said the new server running on a Power Mac 9500 will support more than 100 simultaneous users for text-intensive courses; it will handle up to 50 simultaneous users for graphics-heavy pages.



Multiple-choice and fill-in-the-blank questions can be created with WEST's education Web server software.

The company said it will change its pricing structure with the release of Version 1.1. Corporate pricing will be $1,250, $2,500, $4,000 and $6,500, respectively, for 10, 25, 50 and 100 simultaneous-user licenses; education pricing will be one-fifth of the corporate rate. The update will be free to users of Version 1.0.

Web Educational Support Tools Ltd. of Dublin, Ireland, can be reached at fax (353) 1-283-0669; info@west.ie; http://west.ucd.ie/. □

Pioneer player to speed into 10x territory

By David Morgenstern

Pioneer New Media Technologies Inc. last week took the wraps off Super 10X, a CD-ROM drive that is 10 times faster than a standard-speed player.

Slated for release in the third quarter, the currently unpriced OEM mechanism will combine the constant linear velocity (CLV) spindle rotation method used on normal CD-ROM players with the constant angular velocity (CAV) technology used in hard disks and magneto-optical drives.

According to Long Beach, Calif.-based Pioneer, the CAV spinning technique will improve the drive's access time and offer the highest possible data transfer rates. Data-throughput performance will drop when the drive reads the inside portion of a disc, however. The drive will use a new decoding scheme and a larger processor to handle the increased, variable rates, Pioneer said.

Users will be able to switch the Super 10X between CAV-only and mixed CAV-CLV modes. The former will provide an average access time of 80 milliseconds, which Pioneer said is best for multimedia or game applications that change files frequently. Spinning a disc at 2,100 rpm, it will have data transfer rates from 4.4x to 10.3x speeds on the inside and outside tracks of a disc, respectively.

The company said users of files that are 20 Mbytes or larger will prefer the optimized, mixed CAV-CLV mode. This alternative provides 8x to 10x sustained data transfer speeds but will have a slower average access time of 150 milliseconds.

Pioneer said the forthcoming drive will use a 128-Kbyte RAM cache and support Mac Hierarchical File System, CD-ROM XA Mode 1 and 2, multisession Photo CD, and Digital Audio formats. □

ClarisWorks update adds file converter

Claris Corp. recently released an update to its ClarisWorks integrated package.

Version 4.0v4 of the $129 program adds a file converter that lets users save Version 4.0 documents in the format used in versions 2.x and 3.0. It also includes translators for RTF documents and Corel WordPerfect 3.1 files.

The update also enhances the program's drag-and-drop support and removes empty fields when printing mail-merged jobs, Claris said.

The free update is available from several electronic services; a floppy disk version costs $13.

Claris Corp. of Santa Clara, Calif., is at (408) 987-7000 or (800) 544-8554; fax (408) 987-3932; http://www.claris.com. □

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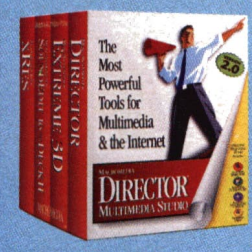

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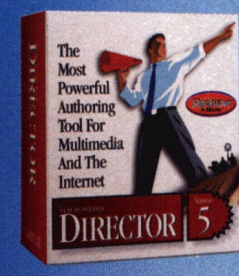

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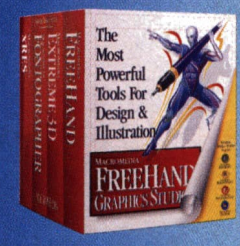

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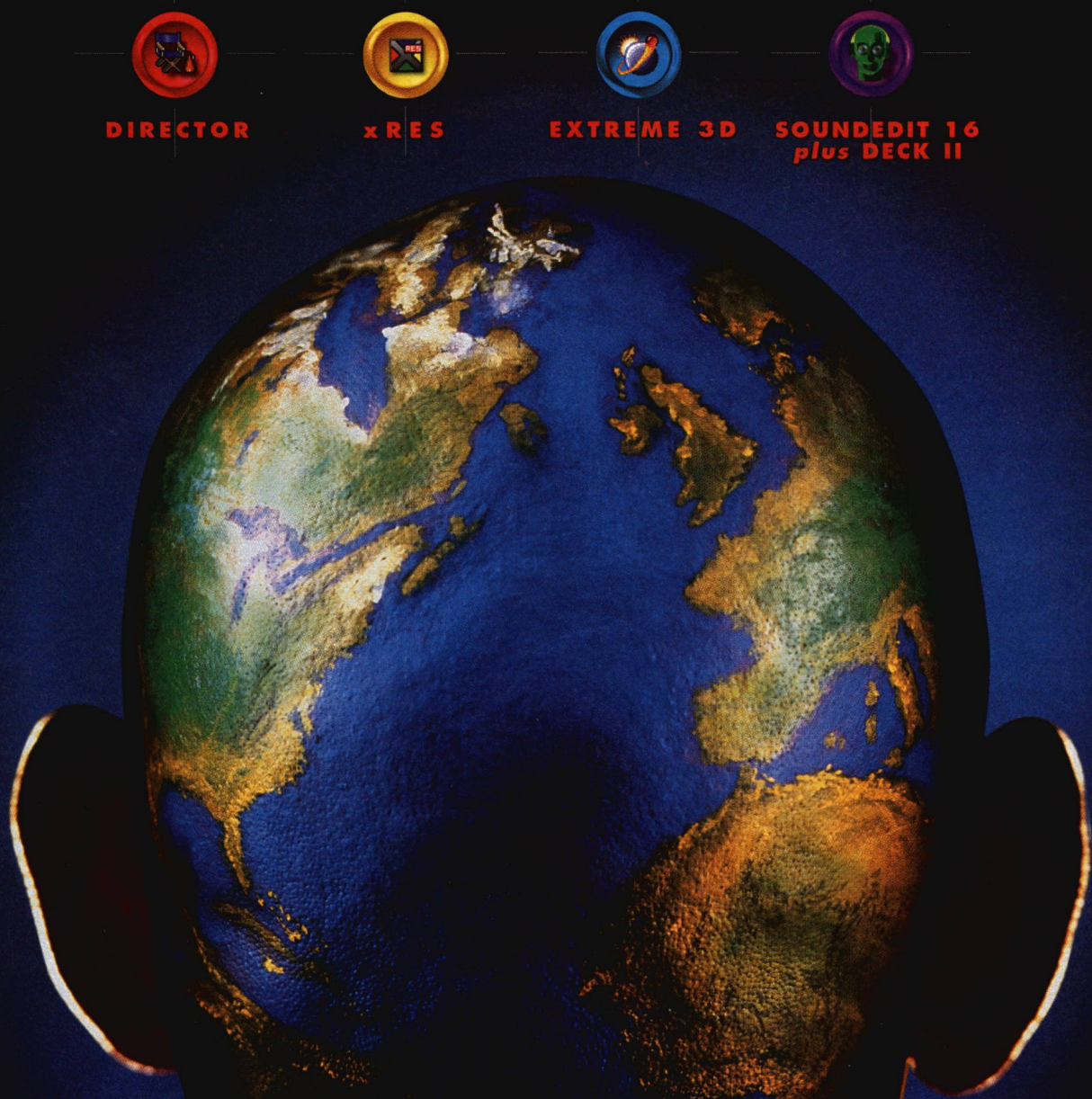

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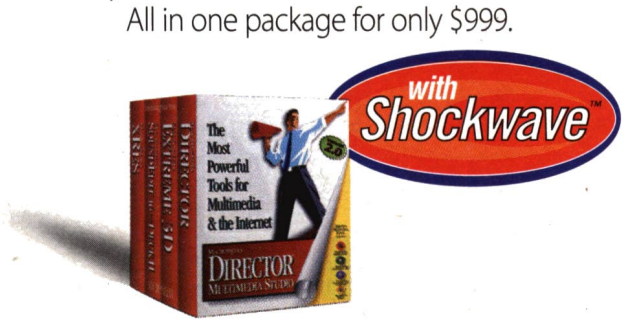

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App clips medical images

By Matthew Rothenberg

DesAcc last week lengthened the reach of its medical-imaging software with ClipboardAccess, a new program that works with popular productivity applications.

The $49 stand-alone program works with ImportAccess, DesAcc's $349 scanner plug-in for Adobe Photoshop and compatible applications. According to DesAcc, the new software lets Mac users bring medical scans directly into the Macintosh Clipboard for use with spreadsheets, databases and presentation programs that do not support Photoshop plug-ins.

ImportAccess translates large 32-bit technical images into RGB format so they can be viewed on Mac screens. It lets users create montages of multiple images and add color bars, shaded backgrounds and numbered cells. The plug-in comes with an editor that lets users control the conversion and display settings for images, such as magnetic-resonance, radioactive-tracer and ultrasound scans.

Additional $129 modules support a variety of formats used with medical scanners from General Electric Co., Philips Medical Systems North America and Siemens Corp., among others.

DesAcc's ClipboardAccess lets Mac users paste medical and scientific images into spreadsheets, databases and presentation documents.

A package of ClipboardAccess, ImportAccess and all scanner modules costs $599.

DesAcc of Chicago is at (312) 404-7888; fax (312) 472-8834; daccess@interaccess.com; http://www.desacc.com. □

Territory Manager picks up the pace

Software Solutions recently shipped an update to its Territory Manager outside-sales software that boosts speed and improves usability.

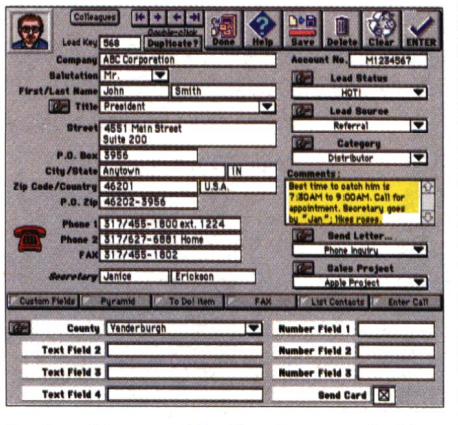
Version 2.5 of the $295 program has been rewritten in optimized 680x0 as well as PowerPC-native code. The company said this provides three to five times the performance on Power Macs and doubles the performance on 680x0 Macs.

Several data-entry improvements have been added, including automatic entry in city and state information based on the entered ZIP code, duplicate-entry checking, and hot links to related input screens. It features a redesigned phone-sales form, which lets users log calls and enter action items.

In addition, the new version adds several new reports, label templates and sales-analysis tools. Users can generate a detailed sales history for clients as well as check the accuracy of sales forecasts, the company said.

Users of the previous version can update for $99.

Software Solutions of Evansville, Ind., can be reached at (812) 477-3181; fax (812) 476-7880; tmsolution@aol.com. □



Territory Manager 2.5 offers 14 customizable fields and a new keyword searching capability.

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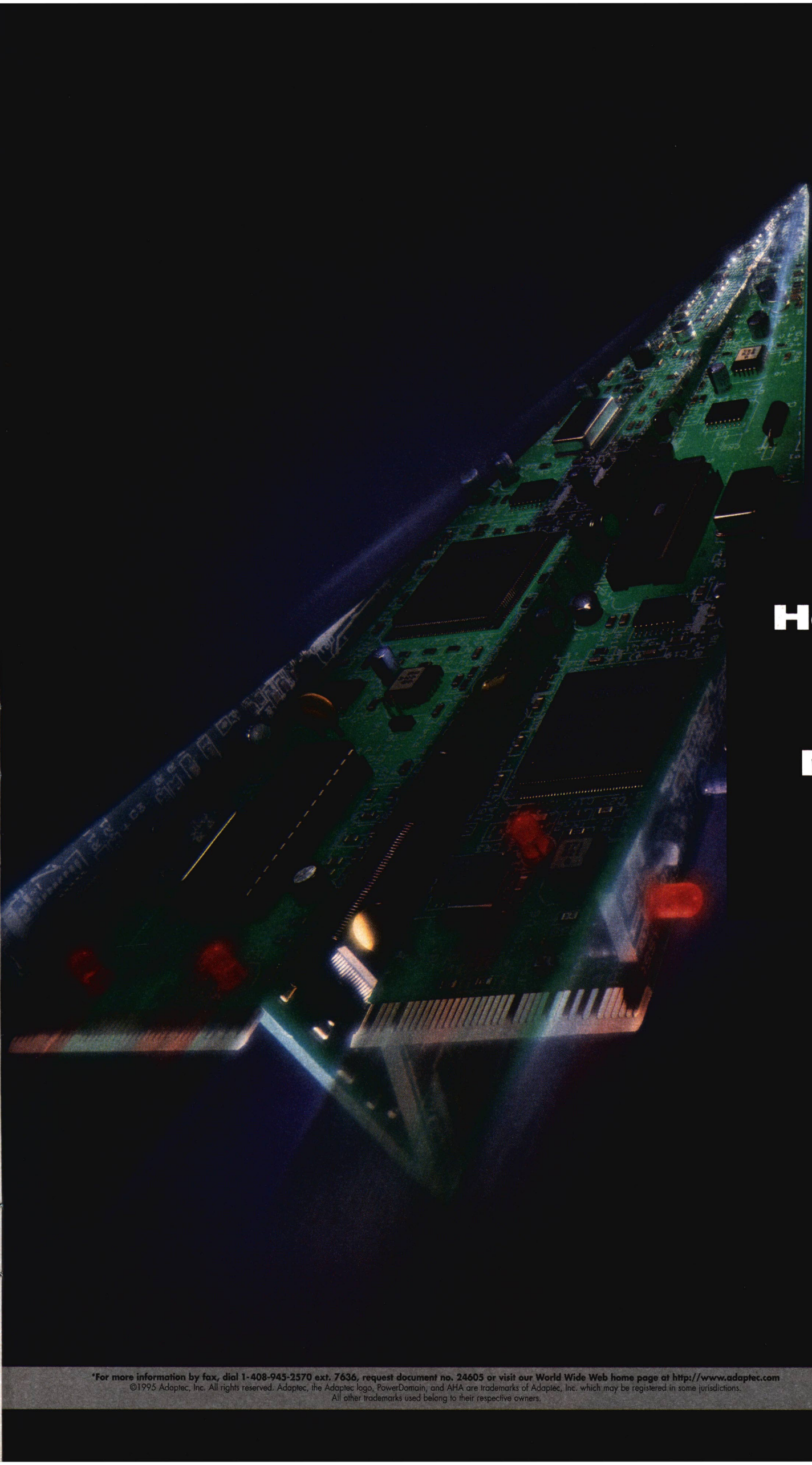

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HOW TO MAKE POWER MACINTOSH FILES FLY.

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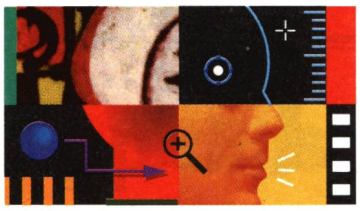


HAPPY ABOUT AMAPI

Yonowat S.A.'s 3-D modeler performs well despite a few interface kinks. See Reviews, Page 26.

Wired plugs into MPEG

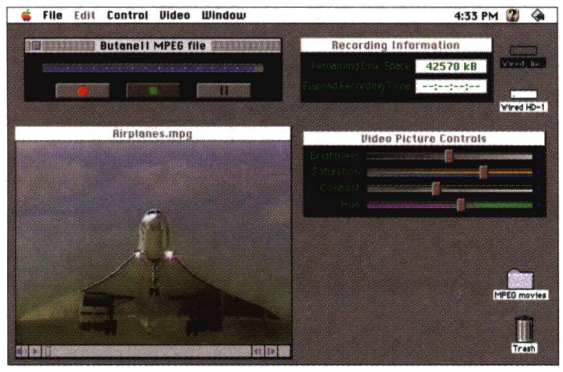
Butane II board squeezes faster

By Kelly Ryer

Fanning the flames of interest in MPEG video, Wired Inc. last week announced its second PCI-based MPEG encoder card. Slated to ship in early May, the $4,999 Butane II will capture and compress video and audio signals and create MPEG-1 or MPEG-2 bit streams.

According to Wired, the Butane II will perform the capture and compression in real time, allowing users to broadcast live video transmissions across intranet or Internet networks.

Wired's current offering, the $2,499 Butane board, processes MPEG in two passes. The Butane first captures video and compresses it into an MPEG-1 video sequence of intracoded frames. A second pass then generates an MPEG-1 IPB (Intracoded, Predictive, Bi-directional) file with a compression rate of 4-to-1.



Up to speed: Wired said its Butane II board captures and heavily compresses MPEG video in real time.

The Butane II will feature three IBM MPEG SE encoder chips that act as video processors, enabling it to eliminate the two-step process and generate MPEG-1 IPB files in real time.

The board will ship with the company's Butane software, which allows users to choose from various data rates.

Like the original Butane, the Butane II will include RCA jacks and mini-DIN 4 connectors for composite and S-video input. Line-level audio can be input via a standard 3.5mm stereo jack.

Wired Inc. of Mountain View, Calif., can be reached at phone and fax (415) 969-9300; http://www.wiredinc.com. □

mbedlets hastens on-line animations

By James Staten

Web designers can now add multimedia interactivity to their pages using the same skills they've honed learning HTML.

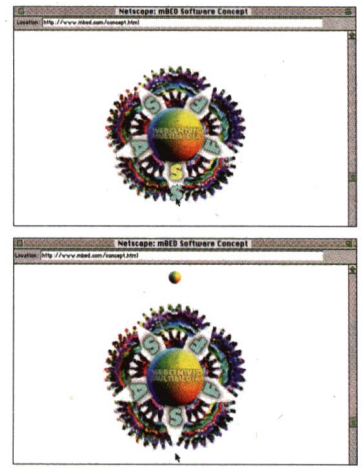
mBED Software Inc. in March announced mbedlets, an object-oriented multimedia description language that lets designers create multimedia files through a system of text tags similar to HTML's. These tags define multimedia effects, such as playing back sounds and video, displaying graphics, and performing an action in response to user input. For example, designers can create a description that will animate an icon when the user passes the mouse over it or clicks on it.

Like HTML, the language provides pointers to graphics and audiovisual files and describes actions that a Netscape Navigator plug-in on the client side can perform. The system supports most Internet-standard file formats, including GIF, JPEG, .WAV and .AU.

"There are millions of designers out there who would like to make their graphics interactive [but] who don't have programming or [Macromedia] Director skills," said Bill Ford, mBED creative director.

One such designer, Pete Storm, president of Silk Presence of Tucson, Ariz., said he favors

See mBED, Page 12



Slingshot action! mbedlets lets users build simple interactive graphics like this one; by pulling back on a letter, users can fire a ball out the other side.

GX strikes Mac desktops with LightningDraw app

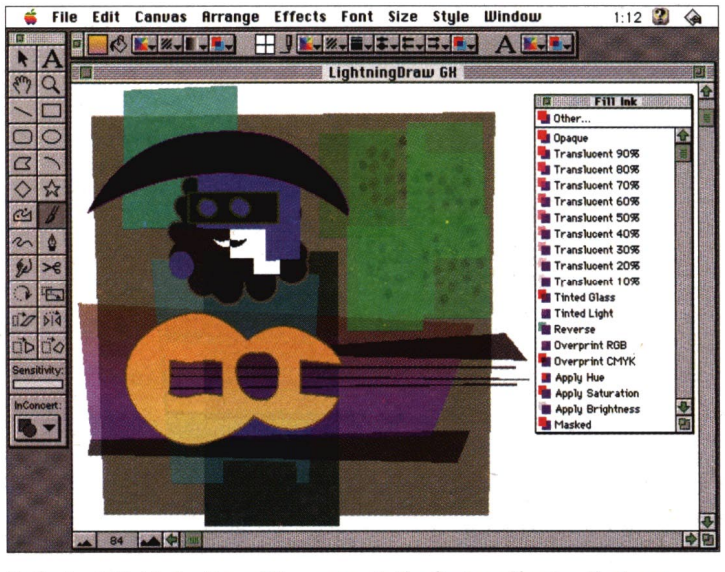
By Matthew Rothenberg

It's been a long time coming, but the first graphics application based on Apple's QuickDraw GX imaging architecture has finally found its way to users.

LightningDraw GX from Lari Software Inc. — first announced at San Francisco's Macworld Expo in January 1995 (see 01.16.95, Page 16) — is available now for $299. The illustration software comes in Power Mac and 680x0 versions.

Lari said LightningDraw GX offers a combination of Bezier curve-based text and drawing tools. The software lets users grab any part of an object to reshape it instead of relying on the control points found in most PostScript

See Lari, Page 12



Hello, Lari: LightningDraw GX represents the first application that uses Apple's QuickDraw GX architecture to generate Bezier text and graphics.

mFactory tools up mTropolis with QuickTime VR

By Rebecca Gulick

mFactory Inc. is gearing up to announce a free upgrade to mTropolis, the company's multimedia authoring system.

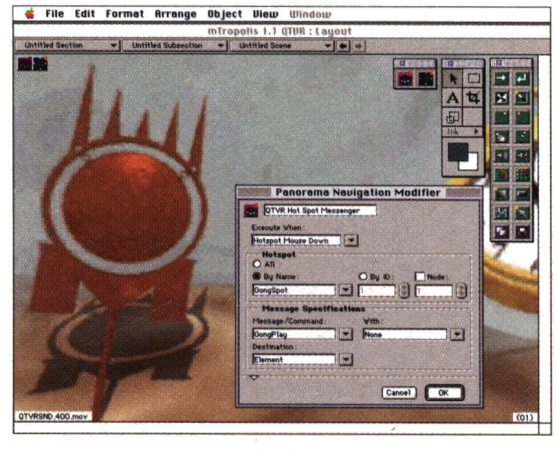
According to mFactory, Version 1.1, slated to ship later this quarter, will speed performance by 200 percent and implement QuickTime VR, Apple's technology for creating panoramic scenes.

mTropolis, which debuted in January, offers interaction among sound, text, video and graphics with programmed behaviors (see 01.15.96, Page 12).

Version 1.1 will let users link multimedia elements to QuickTime VR movies that feature the panning and navigation behaviors standard to Apple's technology. Users will be able to access and modify attributes such as pan, tilt, zoom and current node, according to mFactory.

The update's Panorama Messenger feature will trigger events when users interact with the environment by changing a node or clicking on a QuickTime VR hot spot, for example. Panorama Navigation Modifier will let users navigate nodes and views specified within a panorama.

Other enhancements will include runtime cloning and destruction of objects and the new Media Cue Messenger, which will let users attach messages to specific points in a sound, animation or video clip.



Version 1.1 of mTropolis will add support for QuickTime VR and fix some bugs in the application.

mFactory Inc. of Burlingame, Calif., can be reached at (415) 548-0600; fax (415) 548-9249; http://www.mfactory.com.

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Specular revamps Infini-D, BackBurner

By Matthew Rothenberg

Specular International Ltd. this week is slated to release updates to Infini-D, the company's 3-D modeling, rendering and animation package, and BackBurner, its distributed-rendering add-on.

Infini-D 3.2, a free update for users of versions 3.0 or 3.1 of the $899 package, enhances the software's support for QuickDraw 3D by adding a wireframe mode and real-time updating of cameras and lights. Changes to the modeler include a command to reverse an object's path during morphing, several updated tools and new controls for editing object cross sections. The upgrade also includes a new floating navigation palette for moving cameras. Upgrades from versions before 3.0 are $179.

BackBurner, Infini-D's network rendering utility, has been updated to Version 3.1. Like previous versions, BackBurner consists of a central $179 application and $149 rendering engines for each client machine. Version 3.1 fixes some network bugs and is capable of rendering files created with Infini-D 3.1; an update due in several weeks will handle Infini-D 3.2 files, the company said.

Users of previous versions of BackBurner can upgrade for $49; engine upgrades are $49 each.

BackBurner 3.1 still supports the NuSprint and MacRageous accelerator boards from YARC Systems Corp., although YARC has discontinued the boards. A BackBurner rendering engine for YARC boards costs $499; upgrades are $399 each.

Specular said it will demonstrate BackBurner running on DayStar Digital Inc.'s Genesis MP multiprocessing Mac clone at this month's National Association of Broadcasters show in Las Vegas. Later this quarter, Specular said, it plans to bundle BackBurner with Infini-D free of charge.

Specular International Ltd. of Amherst, Mass., can be reached at (413) 253-3100 or (800) 433-7732; fax (413) 253-0540; http://www.specular.com. □

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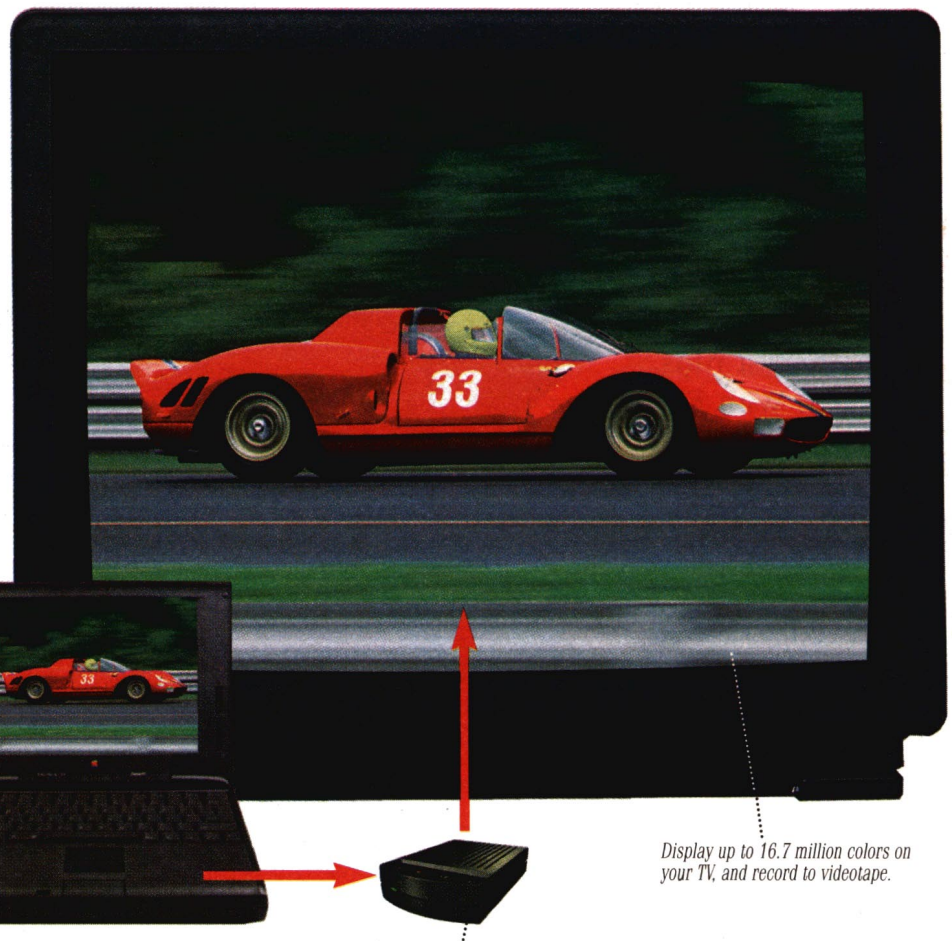

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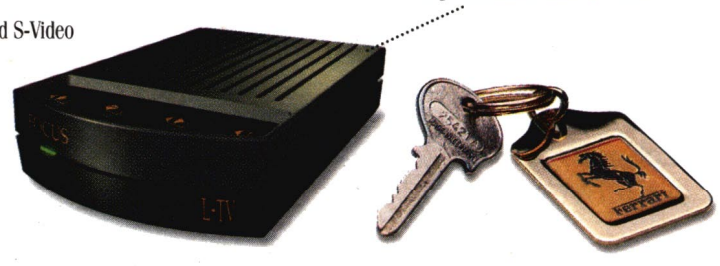

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mBED

From Page 10

mbedlets over Macromedia Inc.'s Shockwave or Sun Microsystems Inc.'s Java because it is easier to learn and has lower bandwidth requirements.

"I'm always looking for ways to improve my sites without having to exclude people who don't have fast connections," Storm said. "This is the kind of push the Internet needs."

The mBED plug-in is available for Mac and Windows from http://www.mbed.com; a Java applet that performs the same functions as the plug-in is also available.

mBED said it plans to provide a graphical authoring system for the language later this year.

mBED Software Inc. of San Francisco can be reached at (415) 778-0930; fax (415) 778-0933; listening@mbed.com. □

Lari

From Page 10

drawing packages, such as Adobe Illustrator.

It features translucency, shading and tinting effects, as well as 32-color gradient fills. The program supports Apple's ColorSync 2.0 color-management system.

According to Lari, LightningDraw GX generates a variety of text effects with GX-savvy Type 1 and TrueType fonts. It lets users adjust the width, weight and italic slant of text, and it supports such options as automatic kerning, fractions, ligatures and hanging punctuation. The software also supports GX's WorldScript capabilities, including right-to-left text and mixed single- and double-byte characters in a line.

LightningDraw GX documents can be saved in QuickDraw GX, PICT or EPS format.

Lari Software Inc. of Chapel Hill, N.C., is at (919) 968-0701 or (800) 933-7303; fax (919) 968-0801; sales@larisoftware.com; http://www.larisoftware.com. □

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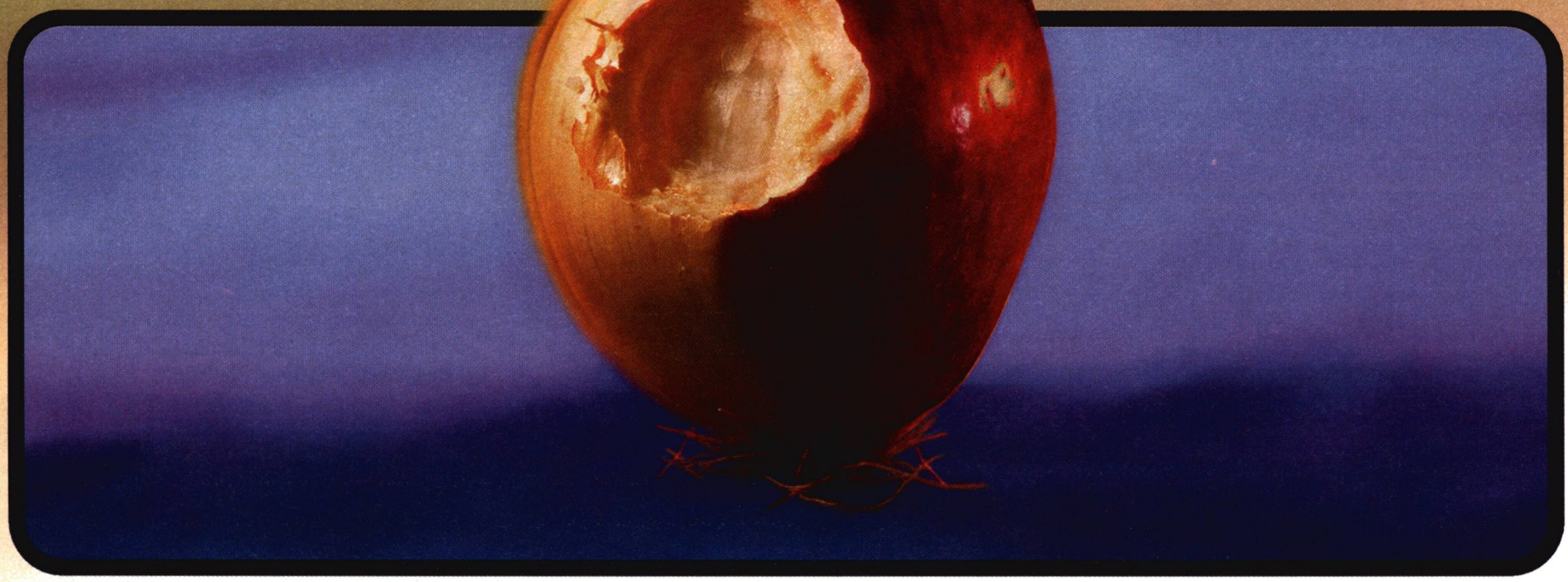

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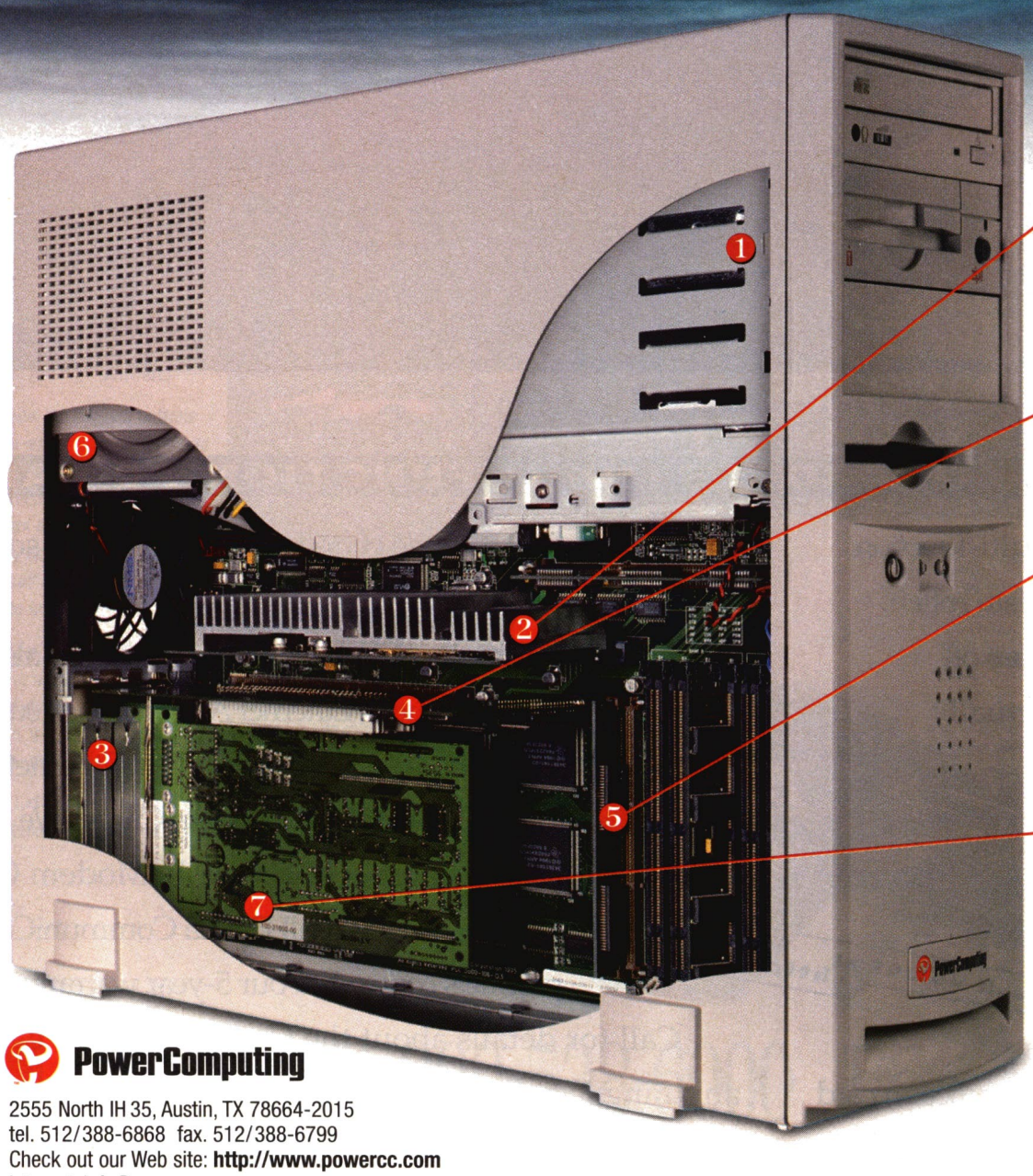

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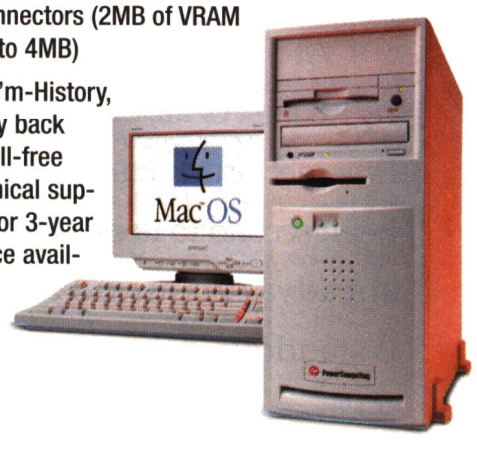

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MW ★★★★
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PC MAGAZINE LABS
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"A machine we love even more than the PowerMac 7500 - the PowerWave 604"
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DOG LOVERS

Apple said 20,000 people downloaded the Cyberdog beta in the first month it was available on Apple's Web site.

Symantec C++ does 68K, Java

Release 5 packs Pascal compiler

By Clifford Colby

Symantec Corp. plans to perk up its programming offerings this week with an upgrade to Symantec C++ 8.0 for Power Macintosh.

Release 5 comes with a Pascal compiler, letting developers with code written for 680x0 Macs generate native Power Mac applications.

It also includes both C and C++ compilers for 680x0 applications, Apple's MrC PowerPC compiler and support for Motorola Inc.'s new PowerPC compiler. Symantec said the memory requirements for the product have been reduced to 16 Mbytes and that users can create 680x0 and native Power Mac applications using the same project file.

"Being able to use the Motorola compiler will be a big win, especially if the performance gains are what [Motorola] says they will be," said Owen Hartnett, the Tiverton, R.I.-based director of the MacTechGroup for the Boston Computer Society. "Its best feature is speed, plus having the 68K compiler built in, which lets me simply maintain one set of code."

Developers can now build OpenDoc components within the environment, thanks to support for the OpenDoc Partmaker.

Also included in Release 5 is Caffeine, the company's Java plug-in. Caffeine contains a project manager, Java source-code editor, Java Developers Kit for the Mac and a Java compiler.

Other additions include drag-and-drop text editing, Apple Guide tutorials, an improved debugger and an installer that can be used to can create minimal programming stations. Symantec C++ costs $399. Registered developers will receive the upgrade free; current users can buy it for $149.95.

Symantec Corp. of Cupertino, Calif., can be reached at (408) 253-9600 or (800) 441-7234; http://www.symantec.com. □

Newstand to serve news with a Mac

By Joanna Pearlstein

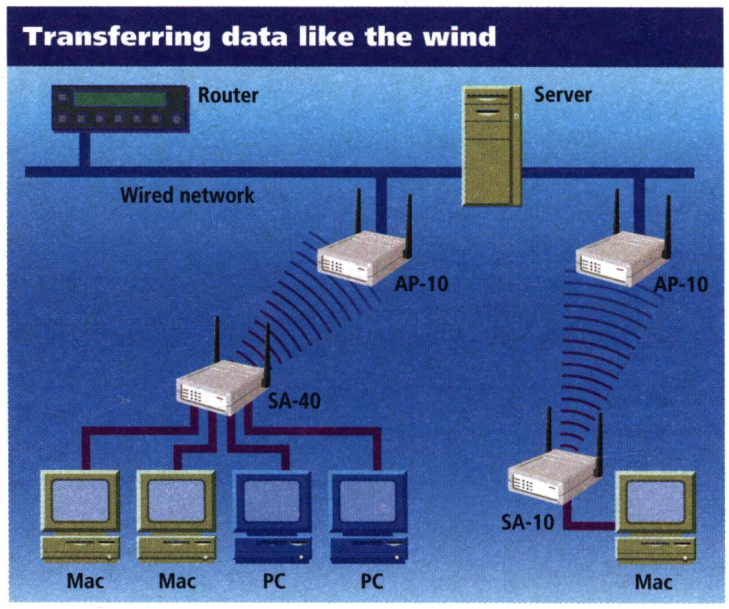
Imagina Inc. will broaden the Mac's appeal as an Internet host this summer when it releases Newstand, the platform's first network news server.

According to the company, Newstand will be a fully compliant RFC 977 Network News Transfer Protocol (NNTP) server based on EveryWare Development Corp.'s Butler SQL database.

Newstand will consist of two components: Newstand Server and Newstand Admin. The Admin component will provide error logging, statistics on transfers, article expiration and deletion, authorization of news providers and readers, and maintenance of active group lists and individual newsgroups.

Newstand is expected to ship in late summer for between $475 and $600.

Imagina Inc. of Portland, Ore., can be reached at (503) 224-8522; newstand@imagina.com; http://www.imagina.com. □



Breeze bridge links wireless networks

By Joanna Pearlstein

Network administrators can now link their divisions and branch offices wirelessly with Breeze Wireless Communications Inc.'s new bridge and station adapters.

The WB-10D, a $1,995 wireless bridge that shipped in March, connects as many as 256 stations to a central Ethernet backbone. Aimed at remote offices, campuses and temporary installations, the bridge transmits data at speeds up to 3 Mbps. It bridges TCP/IP, IPX and AppleTalk networks and works at distances up to 3,000 feet in open spaces and

See Breeze, Page 18

Statistics packages keep eye on Web server traffic

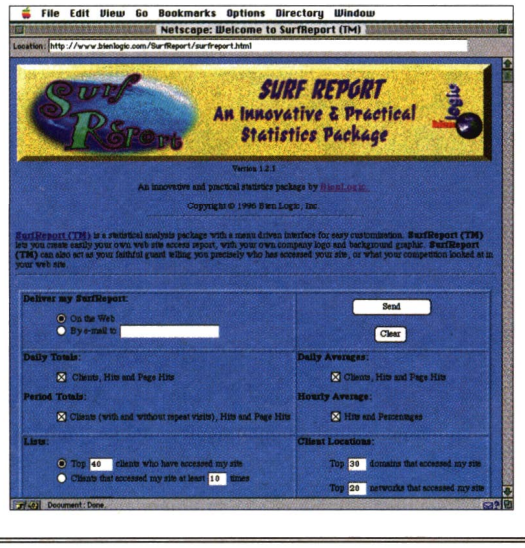
By James Staten

Monitoring site traffic is easier now thanks to new statistics packages that spin Web server log data into evaluative gold.

SurfReport 1.2.1 from Bien Logic Inc. and ServerStat 1.2 from Kitchen Sink Software Inc. both can read Web server log files and reorganize their data into numerous reports. The programs show the movements of users on a site, calculate the popularity of pages, and determine which days and times a site receives the most traffic. Both products output reports in text or HTML formats.

Kitchen Sink's ServerStat 1.2, priced at $99, works with Web and Gopher servers. In addition to its core functions, it tracks the number of files or bytes requested by each user and reveals the time taken to transmit the information. The company said ServerStat is fully scriptable with Apple events, and its data can be sorted on any category.

Bien Logic's SurfReport, a free utility, can be configured through a Web browser (shown here). It can exclude or exclusively track users by domain name. Specific reports and the configuration interface can be password-protected, and reports can be mailed to a specified address automatically.

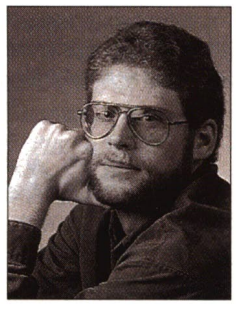


Bien Logic Inc. of La Jolla, Calif., is at (619) 551-4888; fax (619) 551-4890; info@bienlogic.com; http://www.bienlogic.com.

Kitchen Sink Software Inc. of Westerville, Ohio, is at (614) 891-2111 or (800) 235-5502; fax (614) 891-4545; support@kitchen-sink.com; http://www.kitchen-sink.com.

WORKING THE NET ADAM C. ENGST

Here's how to avoid overtime with OT



The biggest news of late in the Mac-based Internet world is the release of Open Transport 1.1, provided with System 7.5 Update 2.0 (also known as System 7.5.3). Open Transport provides improved network performance, PowerPC-native code, on-line help through Apple Guide and new features (such as easy switching from Point-to-Point Protocol to Ethernet). But it has caused some consternation as well. Let me answer some of the main questions I've received.

Open Transport, or OT, will never support 68000- or 68020-based Macs, and it won't support the Performa/LC 5200, 5300, 6200, and 6300 Macs until Version 1.1.1. All PCI-based Power Macs require Open Transport.

You need at least System 7.1 to use OT, although Apple recommends System 7.5.3. OT requires at least 5 Mbytes of RAM on 680x0-based Macs; 8 Mbytes on Power Macs.

If you currently use MacTCP

See Engst, Page 18

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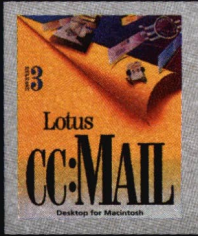

cc:Mail is the most comprehensive e-mail system for the Macintosh. The new Release 3 features include: built-in AppleScript support which lets you drag-and-drop commonly used addresses, folders, and other objects to the desktop for easy accessibility; cc:Mail Rules which makes managing your e-mail easy by automating everyday tasks; and cc:Mail Viewers which let you view and print attachments even if you don't have the application with which they were created. When it comes to e-mail for the Macintosh, nothing is more complete or easier to use than cc:Mail.

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Engst

From Page 16

on a 680x0 or non-PCI Power Mac, OT is optional. If you were using any version of OT 1.0.x, definitely upgrade to 1.1. It is far more stable and provides better performance.

Installation issues

When you install OT via the System 7.5 Update 2.0, what you get depends on several factors. First, machines that can't run OT get only "classic networking" (meaning MacTCP and standard AppleTalk). PCI Power Macs receive only OT. On all other Macs, the System 7.5 Update 2.0 installer adds both classic networking and Open Transport.

Also related to the installation question is whether or not OT was active before the update. If so, Version 1.1 is installed and enabled; if MacTCP was previously active, it remains active and the installer puts Open Transport on the drive in a disabled and invisible state.

A Network Software Selector program (placed in the Apple Extras folder at the root level of the hard drive) enables you to switch between OT and classic networking on machines that support both. Note that Network Software Selector works only under System 7.5.3.

Why would you want to switch between OT and classic networking? Some older programs may not work with OT. Also, OT requires more memory than classic networking (up to 1.5 Mbytes), although you can compensate for this by using virtual memory or Connectix Corp.'s RAM Doubler.

If you were using MacTCP before, OT should pick up your old settings. Some readers have reported that it doesn't always carry over these settings, so write them down and be prepared to reconfigure your Internet connection.

FreePPP issues

If you use The FreePPP Group's FreePPP tool, you will face a more confusing setup problem. For some reason when OT takes over the Internet settings from MacTCP, it sometimes thinks BootP is the appropriate way to determine the user's Internet Protocol address. If this is not correct (and in most cases it won't be), you will need to change the TCP/IP control panel's Configure pop-up menu to "Using PPP Server." Make sure you're using FreePPP 1.0.5 or later (or switch to another PPP client, such as Hyde Park Software's MacSLIP, Apple's MacPPP or InterCon Systems Inc.'s InterPPP).

Some people who use static IP addressing (the "Manually" method in MacTCP) have had trouble after upgrading to OT. First, configure the TCP/IP control panel by selecting Manually from the Configure pop-up menu. Then, enter your assigned IP address in the IP Address field and your domain name server IP numbers in the Name server addresses field. In Config PPP, click Config and then IPCP Options. In the Local column's IP Address field, enter your assigned IP address. In the Remote column's IP Address field, enter your Gateway IP address.

For more information about OT, check out Mark Sproul's OT page at http://msproul.rutgers.edu/macintosh/OpenTpt.html. □

Adam C. Engst is editor of TidBITS and author of "Internet Starter Kit for Macintosh." He can be reached at interq@macweek.com or http://www.tidbits.com.

Breeze

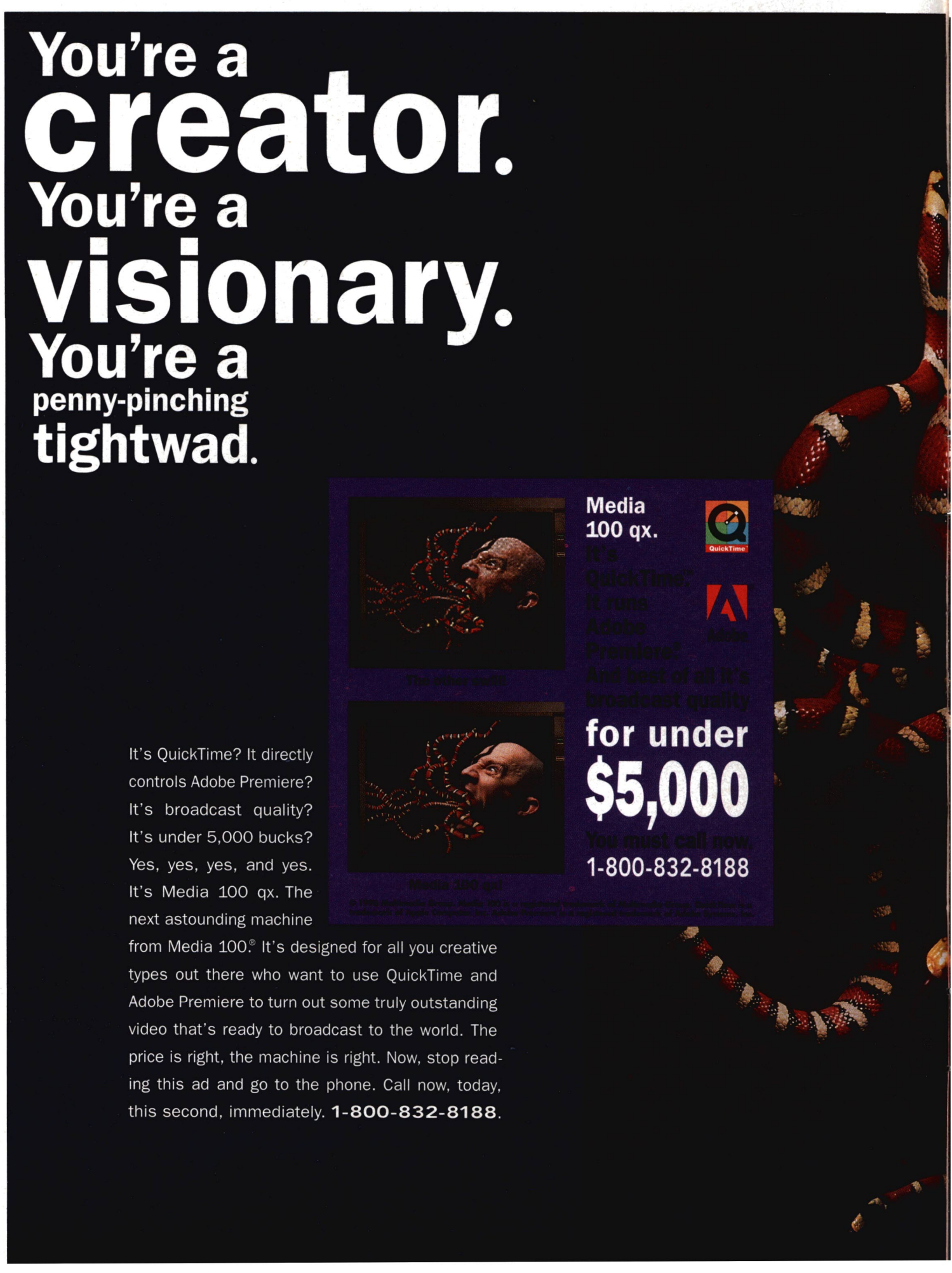
From Page 16

between 200 and 600 feet within offices. With an exterior antenna, priced from $125 to $395, the bridge can cover up to seven miles, Breeze said.

Workstations are connected to the wireless bridge either individually or in small groups: the single-port $695 SA-10D and the four-port $1,195 SA-40D adapters connect Ethernet-equipped CPUs to a wireless LAN; they communicate via the $1,295 BreezeNet Access Point.

Breeze's products comply with the IEEE 802.11 wireless LAN draft specification and support SNMP (Simple Network Management Protocol).

Breeze Wireless Communications Inc., formerly known as LaanAir, of Carlsbad, Calif., can be reached at (619) 431-9880; fax (619) 431-2595. □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PCI speeds conferencing

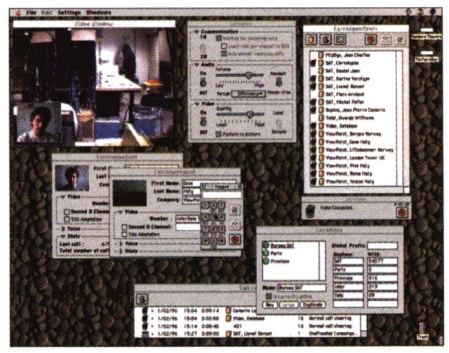
By Joanna Pearlstein

Sat-Sagem has extended videoconferencing options for Mac users through a new PCI card and a software-based conferencing package that shipped in March.

The $1,850 Meet-Me PCI is a 7-inch PCI card that includes an H.320 video compressor-decompressor (codec) as well as an audio codec. The product includes a built-in ISDN (Integrated Services Digital Network) basic rate interface for connections up to 128 Kbps and comes with a color camera with an integrated microphone. A file transfer utility called EasyTransfer and a whiteboard application are also included with Meet-Me PCI.

In addition to the hardware codec, Sat-Sagem also shipped Meet-Me Light, a $295 H.320 software codec. The product requires an ISDN interface and a PAL (European) or NTSC video camera; an AV Mac with a processor speed of at least 80 MHz (or a Power Mac) is recommended.

In other news, Sat-Sagem also provides TheWave, a $795 server that lets Macintosh Communications Toolbox-compliant devices — including modems and ISDN cards — be shared over an AppleTalk network. Two network users, for example, could each use an ISDN card's B channel for transmissions up to 64 Kbps.



Meet-Me in St. Louis: Sat-Sagem's videoconferencing package includes a PCI card with audio and video codecs.

Sat-Sagem of Cupertino, Calif., is at (408) 446-8690; fax (408) 446-9766; satinfo@satusa.com; http://www.satusa.com. □

Open Channel splits up ODBC

By Clifford Colby

Visigenic Software Inc. hopes to make managing client-server connections easier when it debuts its OpenChannel architecture at this week's DB/Expo 96 in San Francisco.

According to Visigenic, OpenChannel will take advantage of the company's Open Database Connectivity (ODBC) technology but will split up ODBC tasks differently than most ODBC architectures. With OpenChannel, a client machine will run a driver manager and an OpenChannel server driver. The various ODBC drivers will reside on an OpenChannel server as will the OpenChannel manager, which will control connections between the client and server. The ODBC drivers on the server will then access the data sources. Visigenic said OpenChannel will work with its own and third-party ODBC drivers.

Visigenic said it intends to release a Java version of OpenChannel. With the Java version, clients will be able to access OpenChannel servers over the Internet. The company is also working on an ODBC-to-Java Database Connectivity (JDBC) interface. JDBC is Sun Microsystems Inc.'s API for database access. Pricing for Visigenic's Java tools was not available.

PowerPC and 680x0 OpenChannel drivers are expected to ship this summer. Along with Mac support, Visigenic will provide drivers for Unix and Windows platforms and Informix, Ingres, Microsoft SQL Server, Oracle and Sybase databases.

Pricing for OpenChannel will range from $3,925 for a five-concurrent-user license to $52,000 for 100 concurrent users. OpenChannel clients can be freely distributed.

Visigenic Software Inc. of San Mateo, Calif., is at (415) 286-1900 or (800) 632-2864; fax (415) 286-2464; sales@visigenic.com; http://www.visigenic.com. □

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Byte magazine was similarly impressed with the PT810. Their reviewer, Jerry Pournelle said, "You'll have to fight me to get this monitor away from me. I am literally sitting here wondering how I got along without it all these years. I can read it comfortably from any position … Highly recommended."

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BPA INTERNATIONAL

Usability, loyalty go hand in hand

The Macintosh market has long rested on the twin pillars of usability and customer loyalty. Today, neither can be taken for granted.

Apple's management still wraps itself in these two tenets like a cloak of invincibility. What the company hasn't acknowledged is that events of the past year eroded these traditional strengths and soured the trust of its most loyal customers.

We're not talking about Windows 95 or the soft consumer and business markets. We're talking about hardware quality control, software compatibility and fundamental design problems.

Apple's problems with the PowerPC-based PowerBooks are now the stuff of legend, but they were no more frustrating to users than the Ethernet problems with the Power Mac 7200 and 7500 series. More recently, users have been cursing their sporadic crashes and freezes with Performa 6300s.

Apple's woes haven't been limited to hardware: Open Transport and printing glitches drove users crazy, and only System 7.5.3, introduced in the past few weeks, provides some hope for stability. But many users report that the update itself caused more problems than it fixed.

And, while support lines burn and angry users vent on-line, Apple continues to trumpet its much-vaunted ease of use. But the sad reality is that those customers who had blindly followed Apple through the highs and the lows are now questioning their loyalty to the platform. As any dealer will tell you, this loss of core confidence directly contributed to the company's financial problems this quarter.

Apple must learn that usability doesn't refer just to the Mac interface; it is the whole computing experience, from pulling the Mac out of the box to upgrading a processor or updating system software. That has been the foundation of Apple's past successes. As the company moves forward in these uncertain times, they must address this above all else. □

THE SECOND DECADE HENRY NORR

Clean installs for now, OS registry for the future

I'm convinced, belatedly, that there's only one sensible way to install System 7.5 Update 2.0: First perform a "clean install" of System 7.5.x (launch the system installer, press Command-Shift-K and select the Install New System Folder button), then run the updater on that new system. All of this, of course, after first running Disk First Aid and Symantec Corp.'s Norton Utilities, rebuilding your desktop, updating your SCSI drivers (if not reformatting your hard disk), and zapping your parameter RAM several times. (Thank goodness the Mac is the easy-to-use platform!)

Installer illogic

Apple does its best to hide the clean-install option: There's no visible button or menu command for it in the installer, and it's not even mentioned in balloon help or the built-in help screens (which still recommend starting your Mac with the Shift key down to avoid problems). The documentation mentions clean-installing only for creating a universal System folder. And even those who know about this option may be tempted to skip it because it makes the update process more demanding, since you must manually move third-party and additional Apple extensions to your new System folder.

Still, it's time well-spent, this voice of experience suggests, because the alternatives — specifically, the procedures detailed in Apple's read-me files — are simply too risky.

The main problem is that the installer, despite Apple's best efforts, just can't cope reliably with real-world System folders, which are all too likely to contain remnants from earlier systems and other models, oddball items installed by third-party products, and standard files with user-modified names.

(To those, including two Apple employees, who wrote to me that users who rename files deserve whatever punishment they get, I say, "Phooey!" If users rename a file, it's usually for a good reason — to help them manage their systems. Apple has no business blaming its customers for not anticipating abrupt and undocumented changes in the rules of Mac computing.)

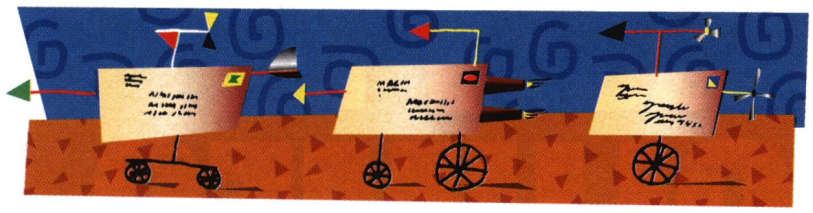
Working smarter

As I suggested last week, Apple deserves credit for trying to make the installer smarter. But even a 370-Kbyte update script — almost four times the size of the original System 7.0 installation script — is demonstrably inadequate. And the problem will only get worse as the Mac OS becomes more component-based.

Instead of just trying harder, Apple needs to rethink its approach. Bringing the clean-install option into the open is one solution, but I don't think the company can get away with asking users to do that often.

My suggestion is a registry — a database to be built into the OS. Every installer would tell the registry what system software it had installed and where; thereafter the registry would track these items, even if their locations and names changed (much as the Alias Manager now tracks the originals for aliases). Update installers would then need only check in with the registry to determine what items to delete or update. □

Henry Norr, editor emeritus of MacWEEK, welcomes feedback in the MacWEEK forums on CompuServe or at henry_norr@macweek.com.



LETTERS

Macs are for real world

Don Crabb's comments concerning the Mac vs. Windows 95 test (03.18.96, Page 27) are out of line. Since when does copying 5,000 files become a simple task or even, for that matter, a task that anyone would care about? The object of the showdown was to prove that the Mac is a much better solution for things that users do every day. It does not appear to me that obscure tasks such as the one Crabb chose were ever considered for this showdown.

It does matter that we go head-to-head with Windows 95 and at the same time talk about the unique solutions on the Mac. We still need to do a better job of demonstrating both these things, but it would be foolish to do one and not the other.

Jeff Lloyd
Account executive, Apple
Chapel Hill, N.C.

Dealers beseech Amelio

More than 1,500 Apple resellers, aggregators, distributors and vendor partners in the United States and Canada currently belong to Apple Dealers Section. Our vendors partner with us because they see the value in belonging to this organization and in return can market to and meet the reseller channel on a one-to-one basis.

I see it as unfortunate when business slips away and I hear a dealer say, "I am not allowed to sell Macs to the schools, so I will sell Intel-standard PCs." Resellers have alternatives and will use them given a destiny without much certainty.

We passionately want Chairman and CEO Gilbert Amelio to declare Apple's commitment to the channel. We anxiously await Amelio's enactment of a level playing field devoid of conflict and disarray. Your sales force is waiting, Dr. Amelio, for your strong leadership. Put the power back into the resellers' hands. We will continue to champion the Apple products. We are poised and ready to be your partners.

Dee Leonard
Coordinator, Apple Dealers Section
Computing Technology Industry Association
Lombard, Ill.

It ain't us, Don

I sincerely disagree with Don Crabb's delusion that, "We have seen the problem at Apple, and it is us" (03.04.96, Page 19). Last year, while watching some sports playoffs, I saw two advertisements back-to-back. The first one was an automobile ad. A red-hot sports car passed a stalled pickup on the road, and as it passed, the engine in the pickup was resurrected. The car spun around to admire its work. The headline read "Power to Spare." By God, I was ready to jump out of my seat, grab my checkbook and buy one right then!

This commercial was followed by an Apple ad where we saw what little Jimmy and Susie, and even Grandma and Grandpa, could do with a Macintosh. I was bored to tears. Who would want such a thing?

The current advertising campaigns are weak at best. The message hasn't changed for years. If people were interested in ease of use, we wouldn't have Unix. They want excitement. How about taking a few dollars and actually promoting the product; maybe even creating an ad that generates a modicum of interest? Apple has been sitting on its laurels, expecting its developers to do its marketing for it since the beginning.

I have "seen the problem," and it is time Apple did something about it.

Lenny Eiger
DataBright Management Systems
San Anselmo, Calif.

Windows dressing down

Just weeks after Lotus was chastised in these pages for including a Windows title bar in a Mac-centric ad, I'm dismayed to see Epson America Inc. insult Mac managers in its two-page ad (03.25.96, pages 8 and 9). The first sentence of the ad reads, "You brought them Windows and e-mail and the Internet." Maybe not, but we might be ready to bring them printers from Epson's competitors.

After all, if Epson can't be bothered to change one word in its ads for a Mac publication, how hard can it be willing to write quality Mac printer drivers?

Ross Scott Rubin, author and consultant
New York

Recycle AOL

In this age of recycling, let's do just that to the multitude of America Online Inc. floppy disks that appear in the mail and in seemingly every box of mail-ordered software and hardware. Slap on a blank disk label, reformat them if you feel so inclined, and then donate them to your local school or charity.

Mercedes Clemens
Pandora Publishing & Graphics Co.
Gaithersburg, Md.

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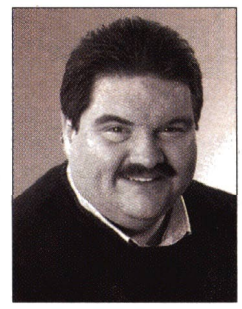
Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3651. We can be contacted on-line: CompuServe, 76077,1351; MCI, 323-1203; Internet, letters@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

THE MAC MANAGER DON CRABB

Sprockets could be the answer for Mac gamers

Epiphanies. We seldom have them, but when we do, they can be awesome. I've just had an awesome one after seeing and reflecting more about Apple's new series of software APIs that enable all Mac OS games to include — with no royalties or licensing fees — an incredible set of capabilities that make any game faster, smarter and a much more savvy network client.

It's funny, really, that I did not snap to this sooner, considering that Ben Calica, Apple senior product manager of game technologies, and I were shooting the breeze about these technologies back at the January Macworld Expo. But then I was focusing only on the slickness of the APIs and not on what they really mean to the Mac OS.



What was my epiphany? That Apple, by bundling games and Internet applications based on the software developers kit APIs into Pippin and Pippinesque platforms, could *instantly* dominate the twin markets of the Internet and CD-ROM games. And by doing so, it could quickly build a revenue stream to fight the rest of its computer wars.

As a collateral benefit, these technologies will also give Mac OS game vendors and Mac OS hardware cloners another reason to fall in love with Apple, all over again.

Sprocket science

All this comes through the Apple Game Sprockets SDK. With this you get:

- NetSprocket, an Internet connectivity and multiplayer gaming API.
- SoundSprocket, a 3-D sound and Sound Manager API.
- SpeechSprocket, a speech-recognition API.
- InputSprocket, a digital joystick control and input device API.
- DrawSprocket, a multiple buffering/display control API.
- QuickDraw 3D RAVE (Rendering Acceleration Virtual Engine), a fast, multiplatform 3-D graphics API.

Frankly, Game Sprockets kicks butt at a time when Apple needs to reassert itself as a state-of-the-art computer company.

Even more provocative is the SDK's architecture, which lets you use what you need and forget the rest. This means you can tweak, redefine or energize any game you write by using some, many or all of the SDK's APIs.

Plug and play, play, play

Thankfully, Apple knows it's on track with Game Sprockets. A bunch of game developers are already testing it — companies such as Bungie Software Products Corp., InterPlay Productions, LucasArts Entertainment Co., PF Magic Inc. and Reality Bytes Inc., all major players in the game world. Game Sprockets shows that Apple has its technical act together in a critical market that, with the right moves, it can dominate.

Consider, for example, a $500 Pippinesque box with an Internet connection and CD-ROM adventure-style game. Only this game is in full 3-D (picture and sound), providing virtual reality "feel," voice control and feedback of characters, all on a home TV and sound system, with dozens of players jacked into it from all over the Internet. You'd love it so much your kids would never get near it. For more info, point your Web browser to http://dev.info.apple.com/games. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.

"Actually, they're memory chips. I worked on computerized war simulations."

Comments? Ideas? Contact Eli at elitoons@aol.com

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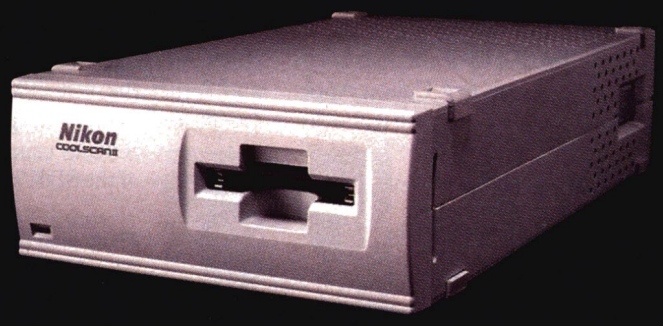

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Mac Lotus cc:Mail finally reaches par with Intel PCs

By Jonathan A. Oski

Mac users of Lotus Development Corp.'s cc:Mail have a lot to look forward to in the recently released 3.0 client. A variety of new features, such as better integration with the Mac desktop, advanced rules, foreign file viewers, enhanced addressing capabilities and AppleScript support, brings the $95 Mac client up to par with Windows, DOS and OS/2 clients.

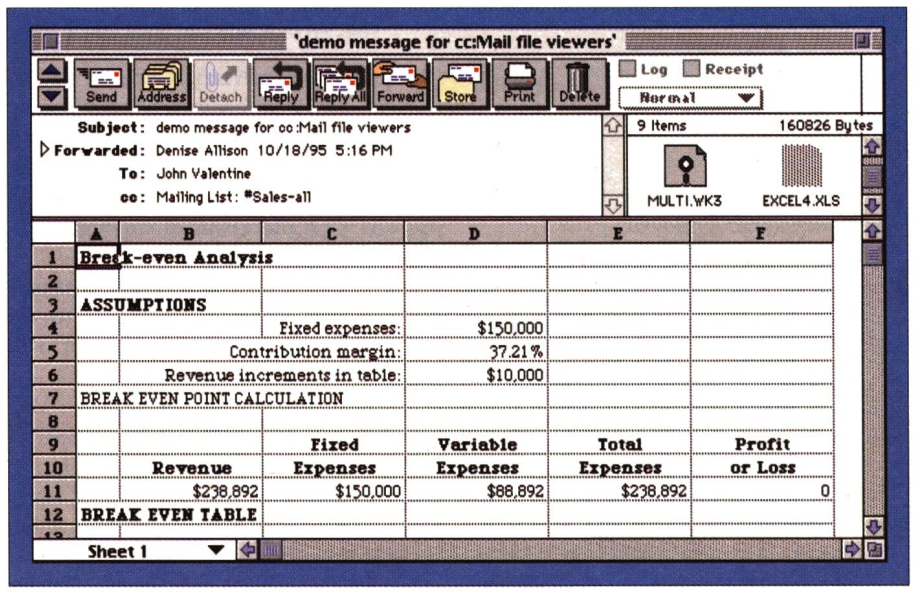
As big as these changes are to current cc:Mail customers, in many cases, they are merely "me too" additions. Both Banyan Systems Inc.'s BeyondMail for Macintosh and CE Software Inc.'s QuickMail have included many of cc:Mail's new features for quite some time, so it is unlikely that this upgrade will entice users of other e-mail systems to convert to cc:Mail.

Desktop integration is great, but client-based rule processing is misguided.

Desktop droplets

The basic interface in cc:Mail 3 remains largely unchanged, with its focal main window listing message stores (such as in box, folders and trash), directories and rules. A target button on the left side of the window can be associated with a specific rule that you want to manually invoke. Bigger news in Version 3, however, is the capability to extend the cc:Mail user interface to your desktop. This new functionality, termed droplets, brings PowerTalk-like capabilities to the Finder. After dragging an item, such as a mailing list, to your desktop, you can use the icon that is created as a faster way to send a message or file to people on the list. You can also use a droplet to quickly create a mail message to an individual or a group. For example, double-clicking (or opening) a droplet brings up an empty message window that is already addressed for you.

Any item in cc:Mail's main window and some items from other windows can be dragged to your desktop. While you must balance this utility with the clutter it may cause, it offers Mac users a means to easily interact with e-mail components without having to switch to the cc:Mail application. cc:Mail must be running and you must be logged in for these droplets to function, but the application can be hidden in the background and summoned using a droplet only when necessary. You can organize your droplets into folders and use any of the Finder's views to further customize their appearance.



File viewer technology in Lotus cc:Mail 3.0 allows users to easily read and print files created with more than 150 DOS, Windows, OS/2 or Mac applications. The viewer window is scrollable for easy navigation around the attachment view.

Making your own rules

Like QuickMail and BeyondMail, cc:Mail 3 lets you create rules to automate message handling. Rules are an ideal way to filter incoming and outgoing messages so you do not have to perform repetitive tasks, such as filing, deleting and rerouting messages that meet certain criteria. You create rules using the Rule Editor where you specify the trigger, scope, conditions and actions. Though Lotus claims that its rule-creation environment is superior to others because of its ease of use, it fails to include a feature akin to BeyondMail's Message Clerk, which simplifies the process even further

See cc:Mail, Page 31

score card

cc:Mail 3.0

Lotus Development Corp.
List price: $95*
Overall value ◆◆◆

cc:Mail 3.0 for the Macintosh adds a number of new features that help bring the client closer to parity with its Intel-side cousins. Although some features, such as rules and attachment viewers, are not new to the Mac e-mail market, they are well-integrated into cc:Mail and should be welcome improvements to current users. A big plus of this upgrade are "droplets," which allow you to blend frequently used e-mail objects into your desktop to ease messaging tasks. Rule processing is certain to be a welcome addition, but the fact that it is client-based has us scratching our heads when we consider competitive products from CE Software Inc. and Banyan Systems Inc. AppleScript support helps round out this new release as it opens a new dimension to those willing to do some simple scripting.

Performance ◆◆◆◆
Features ◆◆◆
Ease of use ◆◆◆◆
Documentation/support ◆◆◆◆

For single user; 10-user license, $495. Upgrades $55 for individual users or $130 for 10-user license.

Key ◆◆◆◆◆ *Excellent* ◆◆◆◆ *Very good* ◆◆◆ *Good* ◆◆ *Fair* ◆ *Unsatisfactory*

Iomega's new Jaz meets, beats the competition

From Page 1

especially for the $499 internal configuration. Additional configurations, including two- and four-disk arrays, are currently available from ProMax Technology Inc. and MicroNet Technology Inc.

Mass appeal

The ideal removable mass-storage solution would be as fast, reliable and capable as a standard hard drive, yet as easy to use and as durable as a floppy disk. The Jaz drive isn't perfect, but it comes closer to this ideal than any of the alternatives.

The external Jaz drive bears an unmistakable resemblance to the Zip drive, but has a dark green case instead of Zip's deep blue. Iomega describes the Jaz's target customer as a graphics or multimedia professional who needs to transport and archive data in large chunks, in contrast to the home-office and small-business users whose needs are accommodated by the slower, lower-capacity Zip drive.

The estimated street price for media is competitive with the alternatives, specifically SyQuest drives and 230-Mbyte magneto-optical drives. Jaz comes out on top in the performance competition, too. MacWEEK Labs benchmarks results show the Jaz drive to be faster than any removable alternative, delivering speed in the same league as the internal hard drives Apple provides in its fastest Power Macs (see benchmarks, Page 30).

Iomega recommends using a SCSI accelerator card for best performance and has announced (but not shipped) Jaz Jet, an under-$200 PCI SCSI accelerator card. Until the Jet card is available, Iomega provides QLogic Corp.'s Fast!SCSI Mac PCI-N card. Although we found the QLogic card provided some boost when using graphics applications such as Adobe Photoshop and

See Iomega, Page 30

Amapi 1.0 gives modelers some reasons to be happy

By Sean Wagstaff

Yonowat's 3-D app has stable performance but interface is still quirky.

When we reviewed Ashlar Inc.'s very short-lived DesignReality, it was one of the worst software values ever to cross our desks. Now French developer Yonowat S.A., which acquired DesignReality, has released Amapi, a 3-D modeling package that, on the surface, has an identical look and feel. On closer examination, though, we were happy to find Amapi a more solid application. Many of the problems that plagued DesignReality, including its endless system-crashing bugs, have vanished.

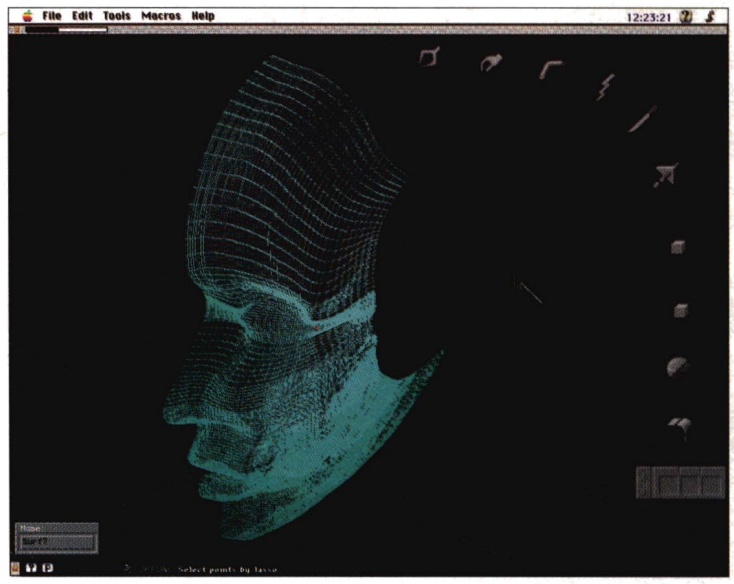
Yonowat's Amapi (a concoction of "You know what? I'm happy.") is available in the United States from View by View Inc. And Amapi users have reason to be happy: The price of the modeling application is $300, down from DesignReality's $1,995 price tag. The product can also run on Power Macs.

Amapi is a spline and polygonal modeler with a quirky interface and a number of powerful features. You can build a variety of relatively simple objects in Amapi with little effort, even ones that would be difficult in a much more expensive modeler.

Don't worry, be Amapi

Amapi allows you to do puttylike sculpting of 3-D surfaces and offers some unusual features we haven't seen in other Mac products. Chief among them is the capability to interactively add and delete resolution from a model and to do three- and four-path sweeps, which let you build complex surfaces from three or four defining curves.

Modelers will also appreciate the Cut by Plane tool, a hidden command that will create a series of evenly spaced sections of a model. This, combined with the resolution control, lets you import a model in DXF (Drawing Interchange File) format, for example, slice it into sections, then reloft it using Amapi's tools, with complete control of the resulting resolution.



One of Yonowat Amapi's unique and useful features is the capability to control the resolution of a model with the Smoothing tool. By clicking on a lofted object and hitting the plus and minus keys, you can increase or decrease the model's resolution interactively.

Amapi offers functional NURBS (nonuniform rational B-splines) modeling that allows you to base shapes on realistic organic curves. However, the Delete Facet, Punch, Cut, Fillet and Thickness tools either don't work on NURBS objects or work by first decomposing them into polygonal forms.

Once we got a handle on Amapi's interface, we were able to create a variety of unusual organic objects without too much trouble. By lofting curves, or starting with primitive objects and pushing, pulling and bending on sections, we could create simple characters, for example, in a reasonable amount of time. However, since Amapi doesn't do animation and it doesn't offer hierarchical grouping or naming, getting complex models into any kind of animation would be difficult. In general, Amapi's lack of a hierarchical structure will prevent users from doing anything very complicated in the program.

For users expecting a high degree of control, snapping and dimensioning capabilities are lacking. Although you can input dimensions for standard types of objects, such as polygons and circles, you can't numeri-

See Amapi, Page 28

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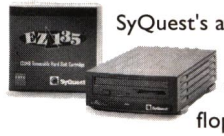

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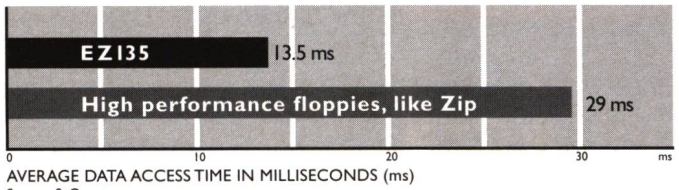

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Amapi

From Page 26

cally set a snapping grid. You can snap one point to another, but this will often require switching views several times.

Amapi does let you navigate easily from one view to another, offering keyboard shortcuts for standard views, as well as letting you rotate the scene with the keyboard's Arrow keys. Amapi defaults to drawing on the orthogonal plane closest to the current view, but you can also define a new working plane by selecting an object's face. This is important, for example, if you want to build an object that is flush with one side of another object. Amapi even lets you duplicate an object onto every facet of a surface.

Spitting image

It's impossible to hide the fact that Amapi rose from the ashes of DesignReality (see 09.26.94, Page 45); the dead giveaway is the totally un-Mac-like, scythe-shaped tool bar that cycles between several sets of tools when you sweep your mouse off the right edge of the screen.

Some users will soon adapt to the unfamiliar interface conventions; for more stubborn users, Yonowat has implemented many standard keyboard shortcuts (and you can set your own as well). Still, die-hard Mac users will prefer to see the tools available in floating palettes. This is particularly true since modeling procedures are often prematurely canceled by inadvertently extending the mouse movement to the edge of the screen at the wrong moment. Operations that require multiple tools can be particularly maddening because of this; many users will be frustrated by having to put away a tool and then reselect it to use it twice in a row.

Other interface conventions are similarly awful, and we wish we could turn them off completely. For example, deleting everything from the screen irrevocably is as simple as clicking the Black Hole button — an innocuous black icon at one side of the scene catalog where files are stored. The catalog, a set of thumbnails representing your scenes, is itself a cumbersome way of storing and retrieving models.

There are other instances where a more standard interface would be less aggravating. For example, creating a three-path sweep requires drawing three separate paths where each shares a common point with the previous one. After drawing each curve, you have to put aside the drawing tool (with the aptly named Put Aside tool), or the curves will be a single line that can't be lofted. You then have to select, in order, the section, profile and contour curves.

Amapi's renderer is also very weak. It offers smooth shaded rendering, but if you need to do realistic texture mapping or rendering, you'll have to buy a program such as the $595 Atlantis, which is also from Yonowat and View by View, or export your models to another application. (Atlantis is also bundled with Amapi for $695.)

Amapi exports a variety of file formats, including DXF, 3DGF (3-D Geometry File), Ray Dream Inc.'s Designer and KPT Bryce 2.0 files. The program also offers QuickDraw 3D Export as a menu option, which actually exports Apple's 3DMF (3-D metafile format).

Conclusions

Amapi's interface is strange and difficult to deal with and will be a serious obstacle to low-end users. These people won't get much help from the manual, either. But Amapi also offers some very useful tools that aren't available in other Mac 3-D programs.

We're particularly impressed with its interactive resolution control, which will be a boon to animators who need to optimize geometry. The resolution control also lets you get in close and work on details of an object without a huge superfine mesh of polygons choking the system. For power users who want to add one or more of its features to their toolbox, Amapi's low price makes it a good value.

View by View Inc. of San Francisco can be reached at (415) 775-6926; fax (415) 923-1025; amapi@hooked.net; http://www.yonowat.com. □

score card

Amapi 1.0

Yonowat S.A.
Overall value ◆◆◆ **List price: $300***

Amapi is a strange-looking, un-Mac-like 3-D modeler with lots of annoying interface quirks and some difficult-to-use tools. The entire interface will be foreign to Mac users, although Yonowat has implemented many standard keyboard shortcuts, and you can set your own. On the other hand, the application offers a variety of features not found in other Mac 3-D modelers, such as interactive resolution control, three- and four-path sweeps, 2-D and 3-D NURBS, and automatic sectioning of 3-D objects. The product is also much more stable — and affordable — than its predecessor, Ashlar's DesignReality. While we're not happy with its interface or documentation, higher-end users who need some of its unusual features may find it a good value.

Performance ◆◆◆ **Ease of use** ◆◆
Features ◆◆◆ **Documentation/support** ◆◆

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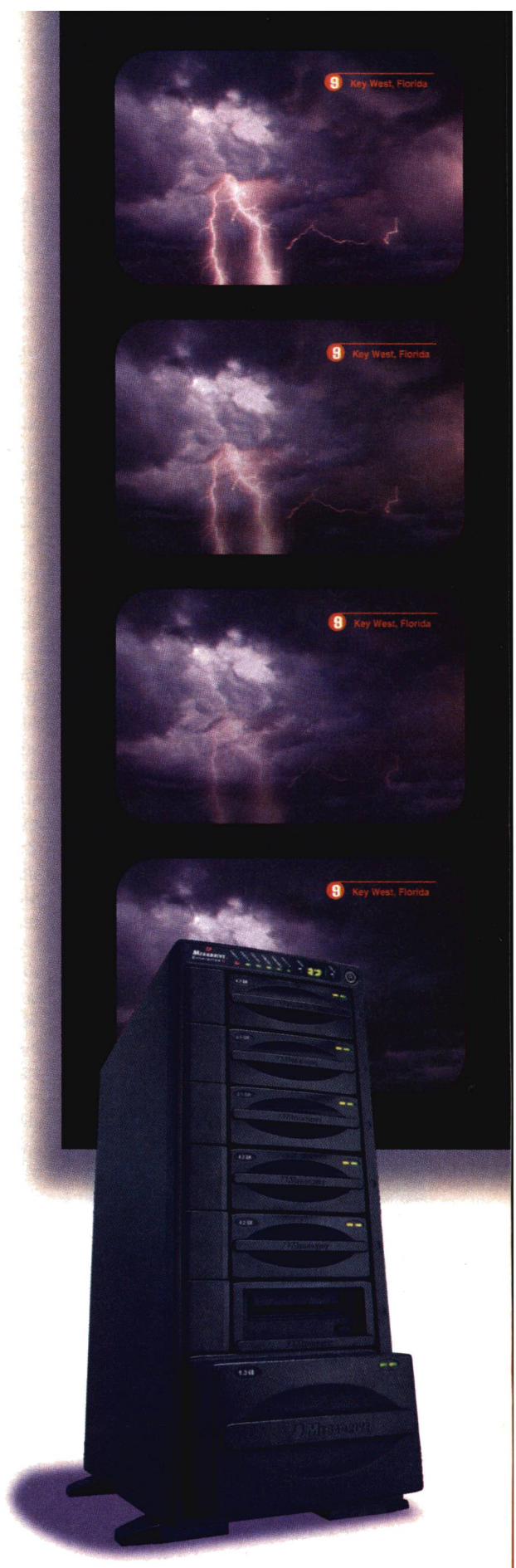

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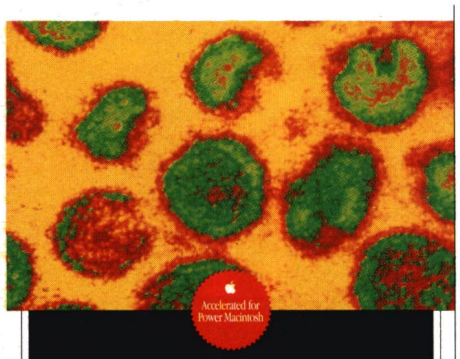

HOW IRONIC.

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A VIRUS

AND YOU'RE

THE ONE WHO GETS

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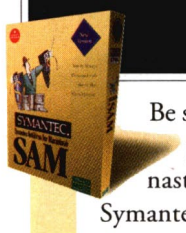

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Iomega

From Page 25

QuarkXPress, in the MacBench Disk Mix tests the accelerator provided only marginal, if any, speed improvements. On the Power Mac 7500, the Disk Mix scores were higher with the external SCSI bus than with the accelerator.

Benchmarks using a Fast and Wide SCSI-2 card from Adaptec Inc. and a Level 0 striped dual Jaz array provided by ProMax demonstrated that the Jaz drive is capable of truly impressive performance when driven by a faster SCSI bus. A properly tuned array of Jaz drives can average 6 Mbytes per second or greater on MacBench's 1-Mbyte Sequential Write test, which is why Jaz arrays should be a hit with the pre-press crowd.

Giant steps

In fact, speed isn't the defining issue for the Jaz drive. To be successful, a new Mac storage option must also be reliable and easy to use. The Jaz drive wins here, too, showing no evidence of the level of bone-grinding cost-containment seen in the Zip drive: The external unit includes a power switch and full SCSI ID capability along with a very cool automatic SCSI-termination switch.

The drive is easy to install and use. The dual 50HD SCSI connectors may be an inconvenience to some, although a 50HD-to-50HD SCSI cable and a 50HD-to-25HD adapter are provided. The external power supply weighs only 9 ounces and seems positively petite compared to the clunky Zip drive power supply. Nevertheless, Jaz isn't quite as portable as it first appears. Once you assemble the cables, disks and power supply, it's more accurate to say that it fills a briefcase rather than fits in one.

Unlike the Zip drive, the Jaz drive should not be set on its side, and users are warned that the cartridges must be returned to their plastic case immediately when they are ejected. The 3.5-inch cartridges, about the size of a stack of two Zip cartridges, contain four Winchester disk platters. The SyQuest-style case is big and bulky, but the cartridges themselves project a rugged image, largely because they lack the annoying SyQuest-signature platter rattle. In three months of daily use we freely commuted with unsheathed cartridges; cavalierly stacked them among papers, disks and other office debris; and committed other crimes of negligence with no discernible penalty.

The Jaz's VCR-style cartridge handling is great. When you drag the Jaz drive icon to the Trash, the cartridge eject button is disabled for about seven to 10 seconds, and then the cartridge is automatically ejected from the drive. This is a major improvement over the SyQuest drive procedure, which requires you to wait for the drive to spin down before manually ejecting the cartridge with a lever.

> Obviously a corporate sibling of Iomega's popular Zip drive, Jaz inherits only the good Zip features and improves on the latter's flaws.

The installation guide is thorough but brief enough to fit within the confines of an eight-page booklet. A similarly sized user guide and a two-page tip sheet round out the printed documentation.

Software

The driver, the Iomega Guest temporary driver and the Iomega Tools 4.3 utility are all derived from the Zip versions.

The Iomega Guest driver lets you quickly connect your Jaz drive to someone else's Mac, do your business and then be on your way without leaving an extension file behind.

Iomega Tools is a model of efficient design. In addition to the usual tasks, such as formatting and initializing cartridges, the utility has uncommon capabilities: You can use it to write-protect a cartridge or prevent a cartridge from mounting on the Finder desktop until you provide a password.

Iomega Findit is a disk-catalog and file-find application based on code developed in France by François Pottier. Findit keeps a catalog of the contents of all cartridges, making it possible to search for files across multiple cartridges, mounted or not.

DiskDup Pro Starter is a limited edition of Roger D. Bates' commercial copy utility that uses available hard disk space to make it feasible to easily duplicate cartridges if you have only a single drive.

DiskFit Direct from Dantz Development Corp. rounds out the utility software bundle. This capable backup utility creates Finder-accessible, incremental backups. Unlike DiskFit Pro, DiskFit Direct is limited in that it can back up only one device per session.

Conclusions

Mac users' ongoing affair with multimedia has helped make 1-Gbyte hard drives standard equipment on even entry-level machines. A well-designed, reasonably priced removable 1-Gbyte cartridge drive, therefore, has obvious appeal, and the Iomega Jaz is the best implementation of the removable-cartridge drive to date.

The coming months should see the arrival of some competition from several companies, including SyQuest Technologies Inc.'s SyJet, but, like the Zip drive, the Jaz is going to be a tough act to follow.

Iomega Corp. of Roy, Utah, can be reached at (801) 788-1000 or (800) 697-8833; fax (801) 778-3190; http://www.iomega.com. □

Iomega Jaz drive

MacWEEK Labs' testing of the external Jaz drive shows that, while it's no speed demon, it can hold its own even with fast fixed hard disks such as the internal 1-Gbyte Quantum Fireball in the Power Mac 7500/100.

Disk speed typical of general-purpose software

Disk Mix	Longer is better	6100/60*	Index
Jaz external drive			12.55
SyQuest 270-Mbyte drive			9.08
Power Mac 7500 internal drive			15.22

Disk speed typical of QuarkXPress and Photoshop

Publishing Disk Mix	Longer is better	6100/60*	Index
Jaz external drive			8.79
SyQuest 270-Mbyte drive			6.91
Power Mac 7500 internal drive			15.81

Test configuration: All tests were run on a Power Mac 7500/100 with System 7.5.2 and 32 Mbytes of RAM. Virtual memory was on and set to 1 Mbyte. The Modern Memory Manager was on and the cache was set to 96 Kbytes. AppleTalk and file sharing were off.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

score card

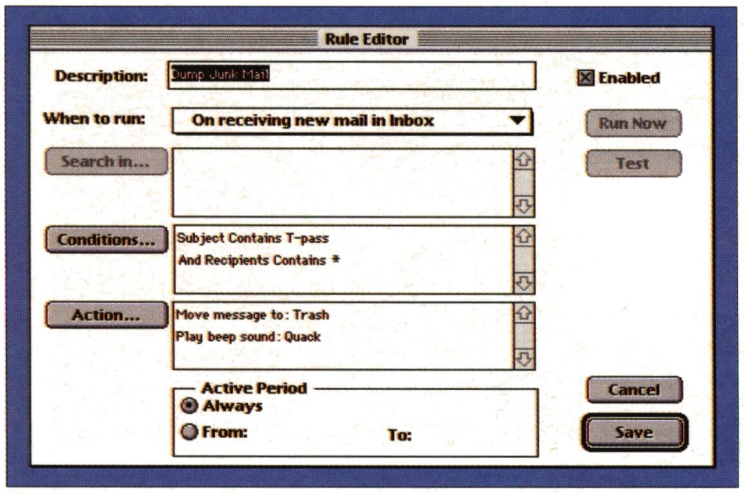
Jaz drive

Iomega Corp.
Estimated street price: $599*
Overall value ◆◆◆◆◆

Believe the hype: Iomega's highly anticipated Jaz drive sets the standard for large-volume removable-cartridge products. It delivers performance in the same league as the internal drive in new Power Macs and is priced aggressively. The ergonomic design of the drive and the outstanding utility software reflects a thorough understanding of how users work. Obviously a corporate sibling of Iomega's popular Zip drive, Jaz inherits only the good Zip features and improves on the latter's flaws. Graphics professionals in particular will discover a taste for Jaz.

Performance ◆◆◆◆◆
Features ◆◆◆◆◆
Configuration ◆◆◆◆◆
Compatibility ◆◆◆◆
Documentation/support ◆◆◆◆

**External drive; internal drive, $499.*



New to cc:Mail 3 is rule processing. Rules are created in the easy-to-use Rule Editor, where you specify the trigger, scope, conditions and actions for each rule. Rules are handy for replying to messages when you are away from your desk.

cc:Mail

From Page 25

by allowing you to use an existing message as a template for creating a new rule.

One button in the Rule Editor window can be used to create "out of the office" rules quickly and easily. For other rules, you need to specify all the parameters. The Rule Editor does simplify the process, but we think Lotus should go one step further by allowing you to easily create context-sensitive rules. For example, it would be nice to be able to create a rule that automatically pulls conditions from an existing mail message.

To us, though, the biggest disappointment of cc:Mail's rules are that the client performs all rule processing. This means that the client must be logged in for rule processing to occur. This represents a security concern for "out of the office" rules, since users must leave their workstation signed into cc:Mail while they are out. Both QuickMail and BeyondMail have offered server-based rule processing for quite some time, so it is disappointing to see Lotus deliver a client-only based rule engine.

Looking at viewers

If you have ever received a message attachment that you couldn't read because you didn't have the application that created it, cc:Mail's new attachment viewers should offer relief. Based on the same technology used in BeyondMail, attachment viewers let you open virtually any message enclosure by double-clicking. More than 150 included file viewers allow you to read and print files created with popular Mac, DOS, Windows and OS/2 applications.

cc:Mail clearly presents message attachments in a window that can be scrolled and resized and that is easily accessible when reading a message. We applaud Lotus' efforts in simplifying this interface. The capability to easily file or view a message attachment makes cc:Mail well suited to those intimidated by message enclosures.

What's it take?

cc:Mail for the Mac comes with separate sets of installation disks for 680x0- and PowerPC-based Macs running System 7.0 or greater. Lotus recommends using System 7.5 to take advantage of the new desktop integration features that rely on Macintosh Drag and Drop. A full installation requires close to 5 Mbytes of disk space for Power Macs and somewhat less for 680x0-based ones. The preferred memory requirement for the cc:Mail client is 2.5 Mbytes. Memory requirements vary depending on use of the built-in viewers; Lotus warns that the viewers can be memory-consumptive and require larger application partitions to work properly.

Documentation

The cc:Mail user manual is clear and concise with respect to most of the program's operations. Message handling and management, as well as rule creation and management, are thoroughly explained. But discussions on using the built-in viewers are surprisingly absent, and little mention is made of AppleScript support, although some included sample scripts should be enough to get most scriptors started.

Lotus offers complimentary technical support for 30 days, but it is limited only to "getting started" questions. A variety of fee-based support programs are available for small to large organizations. Lotus also offers support via fax-back, on-line services and the Internet. We found the technical support and product staff to be knowledgeable and prompt in answering the few questions we posed.

Conclusions

Despite its many improvements, cc:Mail for the Mac 3 is not close to becoming a clear leader in the Mac e-mail market. Many of the new features simply keep the product competitive with other e-mail packages. The latest release offers a good interim steppingstone for existing cc:Mail customers. Another release, due this summer, will add Lotus' DB8 database technology for easier administration; Lotus says Version 3 will help smooth that upgrade process, since the client will automatically recognize the new release.

Collectively, the Version 3 enhancements offer welcome improvements. Desktop integration, via droplets, and the attachment viewers are sure to be a hit among end users. Much-needed rule processing is stymied by the fact that the client must perform all of the work. Some third-party products, such as Peloria Technology Corp.'s Mail Scout, may augment the rule-processing features, but it was unclear how the cc:Mail client would upload rules to the server. Support for AppleScript will be a boon to some, but cc:Mail is not recordable, so script creation must be performed from the ground up, and that will probably thwart the efforts of all but a few scriptoholics.

cc:Mail Inc., a subsidiary of Lotus Development Corp., of Cambridge, Mass., can be reached at (415) 961-8800; fax (415) 960-0840; http://www.lotus.com. □

reviews FORUM

Our review of Apple's System 7.5 Update 2.0 (see 03.25.96, Page 1) sparked a firestorm of letters; we received at least 100 replies (and counting), more than any other review has generated. Most of the responses concentrated on reviewer Henry Norr's "nightmare" experience with installation, which, besides being discussed in the print review, appeared in more depth on-line (http://www.zdnet.com/macweek/mw_1012/install.html). Many letter writers said their installation ran smoothly. A significant minority, however, reported serious problems updating to the new OS.

The full complement of letters is available on MacWEEK's CompuServe forum; a representative sample follows.

Easy or powerful?

Who says a System Update has to be easy? And what are you comparing it too, an oil change? Try upgrading to Win 95!

I am hurt to hear you grill Apple about the ease of use of Update 2.0. This update was no small feat, and installing system updates will probably never be foolproof. But what do you want? If it were really easy, it would be as powerful as a 128K Commodore. And that would, er, suck.

You failed to mention what I consider to be the most noticeable improvement, the success of Open Transport. Yes, 1.0.8 left a nasty taste in our mouths, but 1.1 is out, and boy is it fast. Even on 680x0 machines, though, the difference it makes as PowerPC-native networking software is amazing.

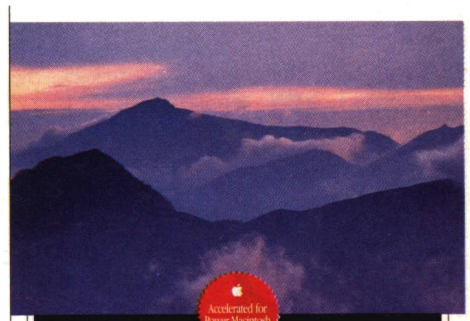
As a consultant, I think this update has been a dream. I have already installed it on a IIx, IIfx, Quadra 800, 6100/66 and 7200/75, and it has worked flawlessly each time.

Scott Holdren
Webmaster
Telalink Corp.
Nashville, Tenn.

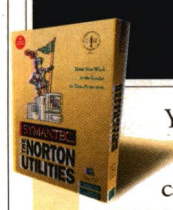
No worries, I'm happy

I don't know why I am so blessed, but I have installed 7.5.3 on a PowerBook 5300c/100, SE/30, LC, IIcx, and IIci without a smidgen of trouble. The 5300c/100

See Forum, Page 33



YOU BOUGHT A MACINTOSH TO TAKE YOU TO A HIGHER LEVEL. NOW MAKE SURE LOST WORK WON'T RUIN THE TRIP.



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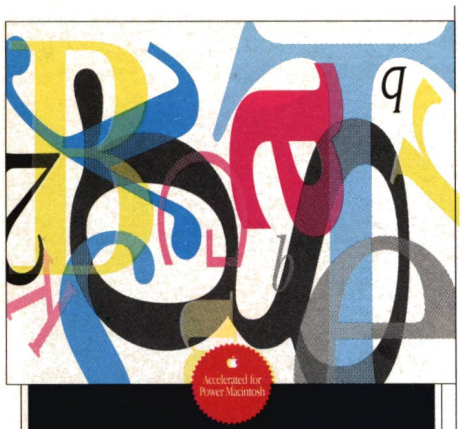
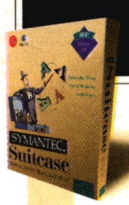


WHAT TO DO WHEN KORINNA CLASHES WITH TIFFANY, BODONI DISAGREES WITH GOUDY, AND GILL AND BASKERVILLE JUST CAN'T GET ALONG.



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IN BRIEF

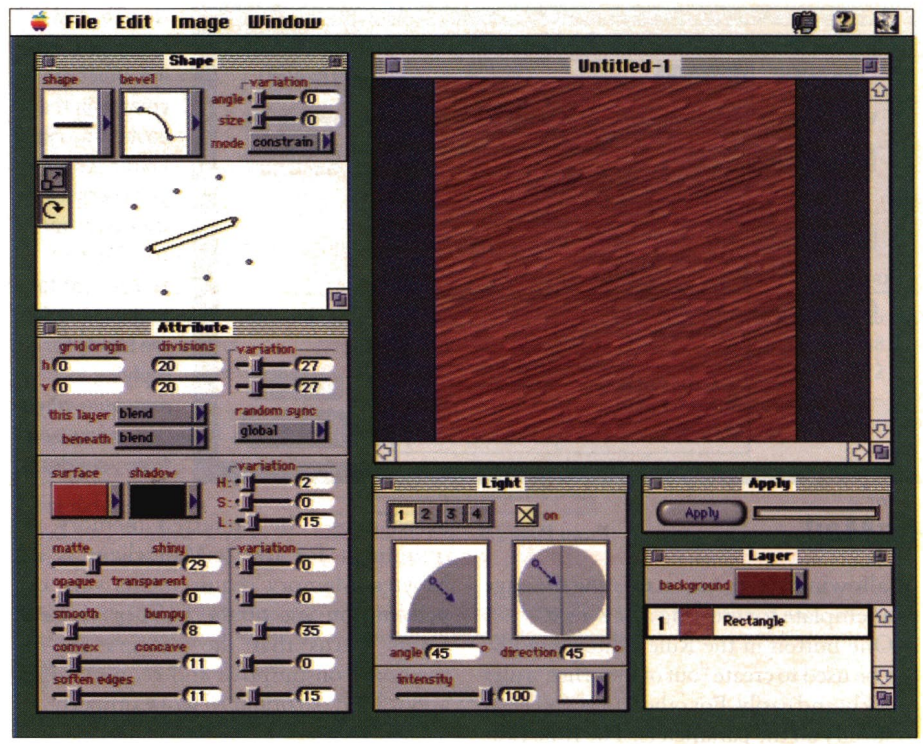
TextureScape 2.0

Randomizing and animation controls add more power

Overall value ◆◆◆◆

Several programs let you create textures for use in illustration, multimedia, 3-D and video programs, but only TextureScape is equally capable of generating both manufactured and organic-looking textures.

With Version 2.0, Specular International Ltd. has added animation capabilities, new features for randomizing texture effects and a built-in set of drawing tools. The $199 program is also now native.



New Variation sliders, one of the best additions in Specular's TextureScape 2, let you specify a degree of randomness for any property.

Adding texture

The program creates a texture by performing a small beveled extrusion on a shape. With TextureScape 1.0 (see 06.20.94, Page 36), you either had to draw a shape in an application such as Adobe Illustrator or Macromedia FreeHand and import it into TextureScape, or choose from the assortment of simple shapes included with the program. In addition to these two methods, Version 2 lets you create shapes directly in TextureScape, as it now has a set of Bezier drawing tools, including a Pen, Knife, Freehand tool, transformation tools and simple geometric primitives. Unfortunately, TextureScape doesn't let you drag and drop shapes from Illustrator into the program.

Any number of instances of your shape can, in turn, be tiled across the surface of the texture. You can adjust the shape of the bevel as well as lighting, bumpiness, height or depth of extrusion, and other parameters to change the appearance of your base shape. When you've adjusted the texture to your liking, the program will render a final, seamlessly tiled image at any size you choose.

At the most basic level, you can use TextureScape to create geometric wallpaperlike textures in which a basic shape is tiled in an ordered arrangement. Or, you can let the shapes mix and overlap to create detailed, complicated textures. To add more detail or texture, you can add more layers, each with its own shape and parameter settings.

Taking shape

Double-clicking on a shape transfers it to your currently open texture. This makes it easy to quickly try out new shapes as the basis for your texture.

Users accustomed to Illustrator's and FreeHand's pen tools may be a little frustrated by some of TextureScape's anomalous pen characteristics. For example, you can't change control points from one type to another on the fly. Instead, you must draw the entire shape, then go back with the Arrow tool to change your control points.

Also frustrating is the Pen tool's Undo feature, which doesn't undo your last pen click, but the entire pen action.

The slider

Once you've created or imported your base shape, you use TextureScape's slider controls to specify the shape's parameters.

One of Specular's best additions to TextureScape 2 is the capability to randomize any parameter of any layer. Small Variation sliders next to each parameter let you specify a degree of deviation from the parameter's main setting.

For example, increasing the Rotation and Scale variation sliders will cause each instance of your texture's shape to be slightly rotated and scaled. So, if your shape has 12 instances of a shape, each shape will be a different size and oriented in a different direction. In Version 1, this effect would have required 12 separate layers.

Because you can randomize position, color and all of TextureScape's extrusion controls in this fashion, you can create incredibly complex shapes in a single layer.

Adobe Photoshop-like transfer modes are now available: These let you specify how overlapping shapes should combine within a layer and how separate layers should interact. All of the usual logical operations (such as Multiply, Divide and Sum) are provided.

For positioning layers relative to one another, a new Show Outlines mode displays outlines of all the shapes in the current layer. Clicking and dragging in the texture's Preview window lets you drag the entire layer, but not individual instances of a shape, around the texture.

Shape tectonics

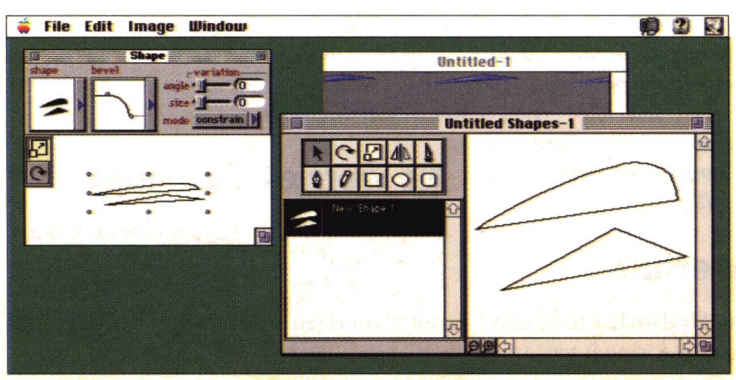
A time-line interface similar to Specular's Infini-D lets you animate any slider settings to create QuickTime or PICS animations of your textures. With the simple keyframe interface you can specify changes at particular points in time. Intervening keyframes are interpolated at render time.

Animations are stored as separate Sequence documents. After defining particular settings for a texture, adding a keyframe stores those settings in the sequence document.

Unfortunately, after setting two keyframes, you cannot return to the texture document to adjust in-between, interpolated settings as you can in a traditional 3-D program. In addition to animating TextureScape's normal slider settings, horizontal and vertical pan controls are provided for making your texture move over time.

The animation interface is simple, but we'd like to see Specular integrate it into the texture document rather than implement it as a separate file type. We'd also like to see some more 3-D technology borrowed from Infini-D in the form of tools for rotating the texture's plane in 3-D.

See TextureScape, next page



Version 2's new Bezier drawing tools enable you to create source patterns for textures directly within TextureScape.

TextureScape

From previous page

Also, it can be difficult to create smoothly looping animations. We'd like to see some features to ease this process.

Along with rendering animations, you can now render directly to CMYK TIFF files. Rendering times, even of multilayered textures, are pleasantly speedy on a Power Mac. Although we have no complaints about TextureScape's rendering quality, we wish we had more rendering options. For instance, we'd like to be able to render textures as PostScript patterns so we could use them in an illustration program.

Conclusions

Specular has done a great job of adding new tools and features to make TextureScape 2 more powerful and easier to use. The new randomize controls make short work of what previously took many layers, while the new animation controls will appeal to video and multimedia producers.

We like the fact that textures created in TextureScape don't all look as if they were created by the same application. Particularly impressive is the program's prowess at creating both organic and inorganic textures.

If you're looking for a texture-making program, this is the one to buy.

Upgrades from Version 1.5 or earlier are $39.95 or free to users who made their purchase on or after Nov. 22, 1995.

Specular International Ltd. of Amherst, Mass., is at (413) 253-3100; fax (413) 253-0540; http://www.specular.com. — *By Ben Long*

Forum

From Page 31

tests about 3 percent to 5 percent faster on a few different benchmarks, and Open Transport is working without a hitch. All of the machines are very stable. There has been only one odd (and unrepeated) crash of Microsoft Excel 5.0 on the IIcx. There are no problems with any AppleTalk connections, which was a pleasant surprise.

Jon Bodner
Mac lab administrator
University of Wisconsin, Madison

Copland better be easier

I have installed the update on a 5200, 5300ce, 6214, 6300 and 8100/80.

The 5300 seems to have a conflict with Connectix Corp.'s RAM Doubler and Speed Doubler, as random hang-ups occur only when these are installed. The 5200 wouldn't install from floppies; I had to use the Internet install.

The 6214, 6300, and 8100/80 had no problems other than no Open Transport or SCSI Manager for the 603 systems.

I hope that Copland/System 8 will go easier than this!

Chris Waldrip
Manager
Computer sales
Valdosta State University Bookstore
Valdosta, Ga.

Long route to success

I've installed the update on two 8500s, three 7200s, and a PowerBook 190. Of these, the 7200 machines and one 8500 installed flawlessly. One of the 8500 machines was having crashing problems, and I had to re-install; it may have had problems before the update, however. It seems to be fine now.

The PowerBook 190 was the worst: The machine initially locked up during the install process. The system was trashed. I tried to create a boot disk with the 7.5.3 installer disk images, but this disk would not boot the 190. Then my 7.5.2 install disks also failed to boot it. At this point I nearly pitched the thing through a window.

The next day I was able to boot with the original disk tools disk, update the driver, re-install 7.5.2 and then install the 7.5.3 patch.

The patch installed a *huge* number of unneeded files, including token-ring and Ethernet NB support. The installer seemed to have no idea what kind of machine it was installing on. I had to remove a lot of unneeded extensions and control panels. Eventually I had a bootable system.

The next challenge was getting networking support for the Global Village Communication Inc. TelePort Platinum Pro PC card. The installer had overwritten Global Village's drivers, and I had to reinstall them. It didn't appear that either the old or the new AppleTalk and TCP/IP software were there. Apparently, the files were there but were invisible. (This is how Apple's networking software chooser works.) I ran the program and selected Open Transport — it was all magically there.

I tweaked a few more extensions, and we now had AppleTalk working with a wired 10BASE T connection to the card. It took me a little bit longer getting Point-to-Point Protocol (PPP) working, and the key points here were to turn virtual memory back off and find a copy of FreePPP 1.05 to replace the older version of MacPPP I was using. But once I did these things, PPP worked flawlessly.

It would have been more helpful for us if we had a generic installer that would install a 7.5.3 system from scratch, not just update an older system. A set of custom boot disks with the latest disk driver updates would have been helpful, too.

Overall I was extremely happy with the way the system update consolidates a lot of extensions and deletes some of that mess of files. But it's clear Apple didn't adequately test the installer on some configurations, such as the new PowerBooks.

Paul R. Potts
Technical lead
Health Media Research Lab
Cancer Center
University of Michigan
Ann Arbor

More testing needed?

It certainly seems like Apple did not test this update across all Mac models, and it is concerning me because as a consultant I had hoped to standardize all of my clients on 7.5.3.

On my home-office Mac, a 7100/80, I ran the installer without a hitch. No problems since then, and I'm also running RAM Doubler 1.6.1, Speed Doubler 1.1.2 and FreePPP 1.0.5 with Open Transport 1.1. Everything's happy.

However, when I ran the updater (per Apple's directions) on a 7200/75, all hell broke loose and I had to do a clean install of 7.5.2, which is where I've left it.

I wonder if Apple used 7100/80 machines and a few other models as test beds but did not try enough diverse configurations.

Adam Glick
Bytehead Technology Consulting
Arlington, Mass.

Good docs helped

I work in the technical services department of a large direct-mail marketing company. We have more than 250 Macintoshes. We have an incredibly high-volume production environment that does not allow for any downtime. The day that System 7.5.3 came out, I installed a fresh copy of Universal System 7.5 and updated to Universal System 7.5.3, cleaned it up by removing all unnecessary extensions, and installed it on our 8500s. Since then, I have received exactly zero calls regarding problems on these machines. I attribute the key to the success I had with this system to Apple's *very* thorough documentation that shipped with the software.

We are now ready to upgrade all our machines to System 7.5.3, since it has proven itself to be the most stable system to date.

Bob Damato
Technical services specialist
Val-Pak Direct Marketing Systems
Largo, Fla.

Bombs away!

Installing this "upgrade" was a nightmare. I pity the novice who attempts this. I can't imagine how Apple shipped this product and claimed one of its benefits is improved stability.

I, too, followed the installation instructions and turned two machines (Duo 280c and Centris 650) into bombing and freezing wonders. After a week, they both seem to have settled down.

What is going on in Apple's quality-control department? They can't afford to be this sloppy!

Steven Karlsrud
Owner
Westnet Packaging
San Francisco

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3602; reviews@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

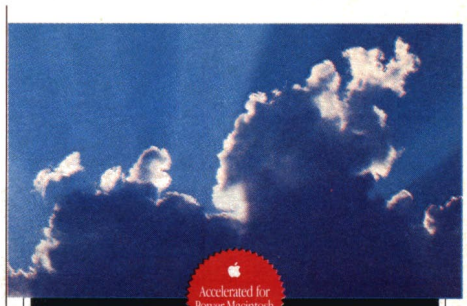


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IMAGE PROCESSING

When to take the low road in image-manipulation apps

By Connie Guglielmo

When you think of image processing on the Macintosh, the programs most likely to come to mind are Photoshop from Adobe Systems Inc. of Mountain View, Calif., and Live Picture from Live Picture Inc. of San Francisco. Both programs are complex; carry a high price tag; feature a rich array of professional-quality retouching and image-editing tools; and have fairly hefty system requirements, since they are designed for users who are taking the high road to image manipulation.

Many users, however, say they are just as interested in taking the low road. Lacking the overhead in terms of money, time and the equipment needed to run one of the powerhouse packages, these users are turning to low-end image-processing programs to get the quick fix they need.

"A good reason to try low-end programs is that you can get some great training," said Greg Brown, an independent artist, writer and designer in Fountain Hills, Ariz. "You get to learn how to use the technology at a price you can afford. Chances are that the program will do everything that you need it to do. But if it doesn't, then you've made a small investment, gotten some great training, and can go and buy one of the more expensive packages."

There is a mix of low-end image-processing offerings on the market today, including Chagall from Technosystems USA of Radcliff, Ky.; Color It! 3.0 from MicroFrontier Inc. of Des Moines, Iowa; PhotoDeluxe from Adobe; PhotoFix from Microspot USA Inc. of Saratoga, Calif.; Easy Photo from Storm Primax of Mountain View, Calif.; and Dabbler 2 from Fractal Design Corp. of Aptos, Calif.

"A good reason to try low-end programs is that you can get some great training."

— Greg Brown, independent artist

The price is right

A variety of factors lures users to these programs. Among them: low price tags, with most of these programs costing less than $200, and minimal system requirements, so users don't need a ramped-up, maxed-out Power Mac to get most jobs done quickly and easily. Most of the programs have simple interfaces and streamlined tool palettes, which are designed to make the program easy to learn and use. And most are also compatible with other graphics programs and the plug-in tools that are designed to work with their high-end image-processing counterparts.

John Tow, creative services director for KCCI Television Inc. in Des Moines supervises graphics, titles and video for the CBS broadcast affiliate. Although he and his staff use Photoshop extensively, they've also added Color It! to the list of essential programs, in part because of its $150 price tag. "The price point made it possible for me to give it to our production people to take it home and use on their own machines," he said.

Tow says he doesn't feel that with Color It! he's compromising on any of the functionality he and his staff are used to. "It's still a full-featured paint and imaging program. For scanning and image corrections, it does most of what we need it to do. There is a point of departure where Photoshop picks up, but for most things Color It! gets the job done."

Color It!'s low price tag also attracted Brown. "For the amount of money that was involved, Color It! has been great," said Brown, who uses the program to edit photographs taken with his digital camera, among other things. "I have a color inkjet printer and I did the illustrations for several books I wrote with [Claris Corp.'s] ClarisWorks Draw. None of these is the greatest or highest-end technology, but they get the work done for me."

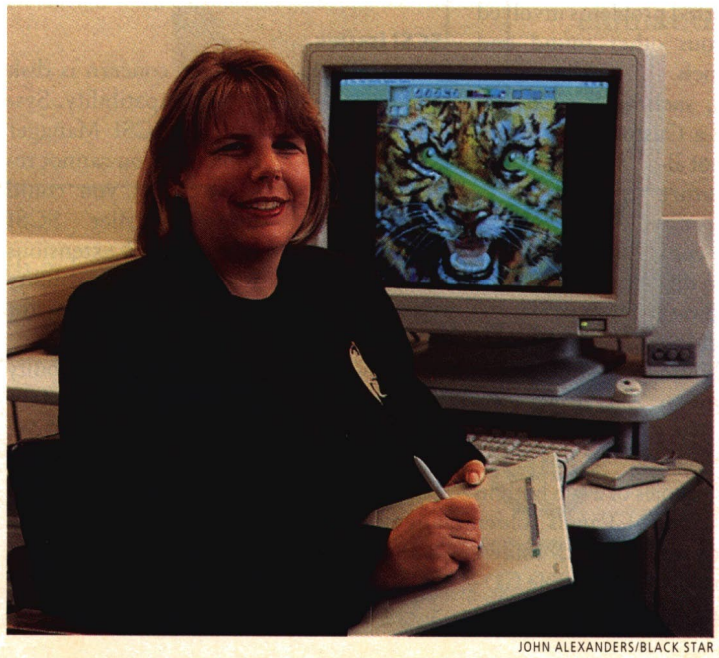
Harvey Teal, a user in Bainbridge Island, Wash., bought Storm's bundle of EasyPhoto software and the EasyPhoto Reader, a small-footprint photo scanner, for about $200. "I'm not into publishing and I have just a little 8-Mbyte Mac. For what I'm doing — a few illustrated letters and documents — the price point was right."

Maximizing performance

Finding a program that would run on a PowerBook 180, equipped with 8 Mbytes of RAM and a color monitor, was the first order of business for Harold Birdsall, manager of a Fox Photo lab in Monterey, Calif. Birdsall chose PhotoFix, which requires a mere 5 Mbytes of RAM (compared with 8 Mbytes and up for higher-end programs).

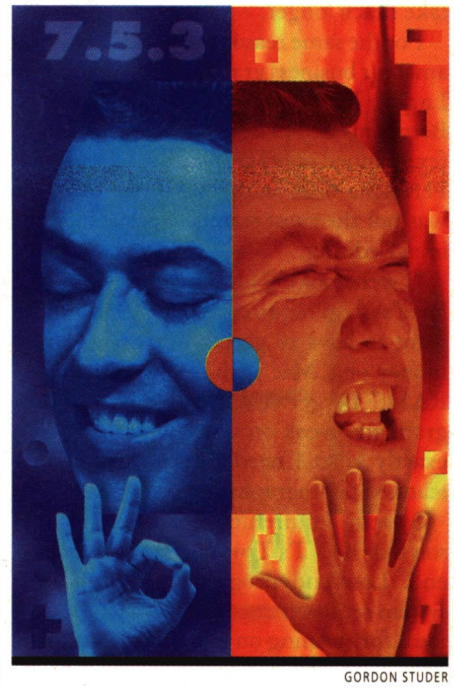
"The fact that it was billed as a lower-sized photo-manipulation program was the reason I bought it," said Birdsall, who has been using it on his home system for cataloging and cropping scanned pho-

See Solutions, next page



JOHN ALEXANDERS/BLACK STAR

Kathleen Blavatt is a San Diego-based author, designer and illustrator who works with disabled adults. According to Blavatt, the image-editing tools in Fractal Design's Dabbler nicely emulate traditional tools, and when it is combined with a pen-based Wacom tablet, disabled users who cannot manipulate the mouse can work on the computer.



GORDON STUDER

MACINTOUCH

RIC FORD

SCSI Manager, Installer, memory are 7.5.3 issues

Two weeks after the release of System 7.5.3, we have numerous real-world experiences as a guide for managing the update. Unfortunately, as noted briefly last week, the experiences are wildly inconsistent. The update is painless and effective for some people, while it turns into a nightmare for others. There are issues with the installer and its scripts, with networking software, with memory management, and with SCSI Manager code. There is also the usual assortment of compatibility problems and random system problems that occur with any big change.

My own initial experience fell between the extremes. An Easy Install on a Quadra 650 seemed to be successful at first, but I could not send mail from Apple Internet Mail Server, even with "Classic Networking," rather than Open Transport, selected. E-mail is essential, so I had to revert to a System 7.5.1 backup and recover queued mail files manually. (I also experienced bizarre problems in which a disk utility falsely showed off-line volumes as mounted.)

The quirky, limited installer is really not up to the task of handling today's Macintosh complexity. My colleague Henry Norr has documented a variety of prob-

See MacInTouch, next page

SOLUTIONS

From previous page

tographs. "Because the program is small, everything runs a lot faster. If I had Photoshop on my PowerBook, I don't think I'd get much done because everything would take much longer."

For the same reasons, Erhard Berger, an amateur business graphics designer in Key Largo, Fla., was drawn to PhotoFix. Berger needed to design a brochure with a few scanned photographs. But he knew his Performa 6200 with 16 Mbytes of RAM was not the most souped-up machine for image editing.

"I went looking for something without a lot of system requirements because I didn't want to have to go out and spend more money on a Mac with 40 to 80 Mbytes of RAM," Berger said. "Although the program was weak on documentation, it did exactly what I needed it to do: clean up scanned photographs."

System requirements was another reason that KCCI's Tow bought into the low end. Low-end programs with minimal system requirements, such as Color It!, are ideal for running on older Macs that have not been upgraded or lower-end Macs that users don't want to upgrade because of budget constraints. "Color It! comes in where we don't have the footprint to run Photoshop. The lower-end requirement is a strong selling point," Tow said.

Programs that don't require a huge investment in training are what sold David Timpone, a computer instructor at Placer High School in Auburn, Calif., and Kathleen Blavatt, a San Diego-based author, designer and illustrator who teaches developmentally disabled adults, on two low-end image-processing programs. The reason: The very different users Timpone and Blavatt work with necessitate programs that are easy to learn and use.

Timpone said programs such as Photoshop, while feature-rich, were too complicated for his high-school students to master. Instead of Photoshop, Timpone and his students beta tested Adobe's PhotoDeluxe, which they have been using to edit photos for a pictorial history to commemorate the school's 100th anniversary. PhotoDeluxe is also being used to prepare scanned photographs for display on the school's recently launched Web site.

"This program was so easy. It took less than 10 minutes for the students who were interested in it to figure it out and to start using it," said Timpone, who is also technical director for the school and manages the 100 computers (60 Macs, 40 Intel-standard PCs) in the campus's labs.

"I don't spend a whole lot of time showing kids how to use each program," he said. "I try to give them the basics, and usually they go right at it from there."

Blavatt has had great success using the program with her physically and developmentally disabled adults.

"The developmentally disabled are like children with no fear about using the computer," Blavatt said. "But they also need something that's easy to learn."

Blavatt gave high marks to Dabbler's palette of painting and image-editing tools, which she says nicely emulate traditional tools. And when coupled with a pen-based Wacom Technology Corp. graphics tablet, Blavatt said the easy-to-use program works well for physically disadvantaged users who have been unable to work with the computer because they could not manipulate the mouse with their hands. Price is also an important consideration for many students; Dabbler's low price — $69 — and low system requirements serve their needs as well.

The photograph of this car was scanned and retouched to add flames using Dabbler. It appears as part of a series of "gallery" samples in Kathleen Blavatt's book on Dabbler, which she wrote to supplement the documentation.

Easing into use

Keeping it simple is what most of these image-editing programs are about. Many offer modest documentation because the applications' level of complexity is kept to a minimum.

Alan Schmuckler, age 12, of Fair Lawn, N.J., had tried to use Adobe Photoshop LE, the limited edition version of Photoshop bundled with his family's scanner. He found it too complex, and now he's made the switch to Adobe PhotoDeluxe. He is currently using it to tweak scanned photos of Jerusalem for his bar mitzvah invitations.

"This is so much easier to use, and it has lots of great effects," said Schmuckler, who said he's been using a Mac most of his life.

"I like scanning in things," he said. "Now I can make fliers for my teachers in school. If they need a logo to be on a flier, I can scan it in and tweak it. I make invitations and banners and birthday cards using baby pictures of my friends."

— By Connie Guglielmo

It's compatible

Another strong selling point for users is the fact that many of these low-end programs support the Photoshop file format as well as the third-party plug-in filters and special-effects packages that have been designed for Photoshop — without having to invest in that application. Users get to take advantage of these specialized effects while using the low-cost, easy-to-use program with which they've become familiar.

Steve Cooper, owner of Bingo West Inc., a bingo-card-making business in Hayward, Calif., uses Photoshop to create newspaper ads and direct mailings. But he now uses Color It! about 80 percent of the time and can easily transfer files between the programs.

"Color It! is a lot faster," Cooper said. "It's not nearly as powerful as Photoshop. It's kind of like using ClarisWorks vs. Microsoft Excel. But the tools are easy and the Photoshop plug-ins work with it no problem." □

MACINTOUCH

From previous page

lems with System 7.5.3 installation (see 03.25.96, Page 1), and you may have to override or second-guess the scripts to get a successful installation. Here are some sample problem reports:

- Serial Port Arbitrator from Apple Remote Access (ARA) is incompatible with SerialDMA (see 12.04.95, Page 52), which is part of System 7.5.3. (ARA also needs to be installed prior to performing the update to avoid replacing new resources with outdated ones.)
- The installer looks for certain components in your existing System folder and installs new versions of those components only if it finds old ones named according to its expectations. You may have to rename files, and you may have to do intermediate installations of some components when creating a universal System 7.5.3 configuration. You may also have to manually remove obsolete extensions and control panels following installation.
- AppleVision software (for AppleVision monitors) is problematic. NuBus Macs and PCI Macs apparently require different AppleVision and supporting files, and the installer is not handling the whole issue.
- There are assorted problems involved in managing various other sound and monitor control panels.
- New features, such as the Control Strip, may require a Custom installation on models that do not already have the feature installed.
- Watch out for confusion between two different Energy Saver control panels. (Setting sleep to Never should avoid some problems on certain models.)
- The installer has a problem if you have copies of a file both in the Extensions or Control Panels folder and also in the associated "disabled" folder.
- The update installs a new Apple CD-ROM driver that may conflict with DOS-compatible Macs. (And DOS-compatible Ethernet software has problems with Open Transport.) One user reported bombs copying files from the CD after installing the update; switching to a third-party CD driver solved the problem.

You may have to do intermediate installations of some components.

SCSI issues

A second area of serious concern is disk and peripheral driver compatibility. System 7.5.3 builds in new SCSI Manager code, and you cannot remove it, as you could disable earlier SCSI Manager 4.3 extensions for better compatibility on Quadra models, for example.

All the compatibility issues with SCSI Manager 4.3 (see 01.15.96, Page 33 and 11.28.94, Page 43) are part of the update, as well as any issues introduced by the new code.

It is important to update disks and other SCSI devices with the latest SCSI Manager 4.3-savvy drivers before installing the update. Some Mac system administrators report that reformatting drives before applying the update improves the success rate.

In another disk-related area, Symantec Corp.'s DiskLock 4.0 utility can damage the System file during installation if you do not log in with sufficient privileges. (Log in with "superuser" privileges before installing the update to avoid problems.)

Memory fragmentation

Two other trouble spots in System 7.5.3 are memory management and networking. Future columns will cover these in more detail, but one glitch involves both areas: When running Open Transport, there is an option in the advanced mode of the TCP/IP control panel that can lead to memory fragmentation. Uncheck the "load only when needed" option in this control panel to avoid this trap. □

Comments on MacInTouch are welcome at (508) 897-2621. Please address e-mail to 72511,44 on CompuServe or ricford@macintouch.com on the Internet. The MacInTouch home page is at http://www.macintouch.com/~ricford/.

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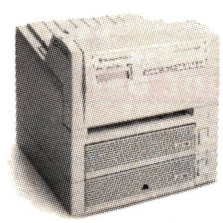

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APS Q 1080 Quantum 1080 Fireball	1042MB 5400 rpm	MacUser LABS ★★★★ MacWeek ◆◆◆◆	239.95	NEW LOW PRICE! 299.95
APS Q 1280 Quantum Fireball II 1280	1222MB 5400 rpm	POWER MATCHED FOR POWER PC	269.95	NEW LOW PRICE! 369.95
APS I 2160 IBM Ultrastar ES	2063MB 5400 rpm	POWER MATCHED FOR POWER PC	479.95	NEW LOW PRICE! 579.95
APS MS 2000 Micropolis 4421	2047MB 5400 rpm	POWER MATCHED FOR POWER PC	499.95	599.95
APS Q 2210* Quantum Capella	2047MB 5400 rpm		599.95	699.95
APS ST 4200 Seagate ST 15230N Hawk	4094MB 5400 rpm	MacUser LABS ★★★★	899.95	999.95

*While supplies last

APS IDE DRIVES FOR MACINTOSH

Model	Capacity/Features	Internal
APS Q 1280A Quantum Fireball II 1280	1222MB 5400rpm (Fast ATA-2)	NEW LOW PRICE! $239.95
APS ST 2140A Seagate Medalist ST32140A	2167MB 5400rpm (Fast ATA-2)	349.95

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Then call 816-920-4150 from a fax machine with a handset or fax modem and follow the instructions.

APS HIGH-PERFORMANCE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0 Micropolis 4221	1955MB 7200 rpm	POWER MATCHED FOR POWER PC MacUser LABS ★★★½	$599.95	$699.95
APS MS 2.0AV Micropolis 4221AV	1955MB 7200 rpm	POWER MATCHED FOR POWER PC	699.95	799.95
APS Q 2.0 Quantum Atlas XP32150	2050MB 7200 rpm	POWER MATCHED FOR POWER PC MacUser LABS ★★★★	699.95	NEW LOW PRICE! 799.95
APS ST 2.0 Seagate ST 32550N	2047MB 7200 rpm		749.95	849.95
APS MS 4.0 Micropolis 3243	4064MB 7200 rpm	POWER MATCHED FOR POWER PC MacUser LABS ★★★★	999.95	1099.95
APS Q 4.0 Quantum Atlas XP34300	4101MB 7200 rpm	POWER MATCHED FOR POWER PC MacUser LABS ★★★★½	999.95	1099.95
APS MS 4.0AV Micropolis 3243AV	4064MB 7200 rpm	POWER MATCHED FOR POWER PC	1099.95	1199.95
APS ST 4.0 Seagate ST 15150N	4094MB 7200 rpm	MacWeek ◆◆◆◆ MacUser LABS ★★★½	1199.95	1299.95
APS MS 9.0 Micropolis 1991	8669MB 5400 rpm	NEW LOW PRICE!	1899.95	2099.95
APS MS9.0AV Micropolis 1991AV	8669MB 5400 rpm	MacUser LABS ★★★★	1999.95	2199.95
APS ST 9.0 Seagate ST410800N	8669MB 5400 rpm		2199.95	2399.95

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These products are performance-matched for optimal performance in the Power PC environment.

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Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0W Micropolis 4221W	1955MB 7200 rpm	POWER MATCHED FOR POWER PC	$699.95	$799.95
APS Q 2.0W Quantum Atlas XP32150W	2050MB 7200 rpm	POWER MATCHED FOR POWER PC	799.95	NEW LOW PRICE! 899.95
APS MS 4.0W Micropolis 3243W	4064MB 7200 rpm	POWER MATCHED FOR POWER PC	1099.95	1199.95
APS Q 4.0W Quantum Atlas XP34300W	4101MB 7200 rpm	POWER MATCHED FOR POWER PC	1099.95	1199.95

FAST/WIDE ADAPTER CARDS

Model	External SCSI Connection	Internal
QLogic Fast!SCSI Mac PCI-W Adapter for Fast/Wide drives	HD 68-Pin	$379.95
Silicon Express IV For NuBus Quadras & Power Macs only. Fast/Wide adapter card.	HD 68-Pin	849.95

APS IDE POWERBOOK DRIVES

Model	Capacity/Features	Awards	Internal
APS Q 810 Quantum Europa	778MB 3800 rpm, Fast ATA-2		NEW LOW PRICE! $379.95
APS Q 1.08 Quantum Europa	1037MB 3800 rpm, Fast ATA-2		474.95

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- ✔ Packs up to 255MB on each 3.5" cartridge
- ✔ Best performing removable cartridge drive

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*Only with the purchase of one SQ 270 cartridge

	Capacity	Access	Seek	Read Trans.	Write Trans.	Warranty	Price per MB
APS SQ 3270	255MB	27ms	13ms	1.8m/sec.	1.6m/sec.	2-year	$1.17
Zip	96MB	45ms	33ms	1.0m/sec.	1.0m/sec.	1-year	$2.07
EZ135	128MB	27ms	13ms	1.1m/sec.	0.8m/sec.	1-year	$1.80

FASTEST DAT DRIVE EVER!

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- ✔ Backup at up to 50MB per minute!
- ✔ Up to 8GB of storage per 120m DAT tape
- ✔ The new performance standard for network DAT backup

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If you've been searching for a way to backup in less time, this is the drive for you. The new APS HyperDAT PRO is perfect for time-critical applications. Setting the standard for DDS-2 DAT backup with real-world backup speeds as high as 50MB per minute. The drive uses standard 120m DDS-2 tapes with hardware compression to store up to 8GB per tape. It is compatible with all DDS and DDS-DC compatible tapes and mechanisms.

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Model	Capacity/Features	Awards	SR2000
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APS DLT40 Digital Linear Tape Mechanism	40GB		5499.95
APS DLT4500 Loader Digital Linear Tape Mechanism	200GB		9999.95
APS DLT4700 Loader Digital Linear Tape Mechanism	280GB		11499.95

All APS tape drives include Retrospect® by Dantz®

APS QIC & DAT TAPE BACKUP SYSTEMS

Model	Capacity/Features	Awards	Internal	SR2000
APS HyperQIC™ QIC 3080 Mechanism	2GB	MacWeek, LABS	N/A	$499.95
APS DAT DDS-1 Non-Compression Mech.	2GB Back Again by popular demand!		$649.95	699.95
APS HyperDAT® DDS-2 Compression Mechanism	8GB		849.95	899.95
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APS DATLoader600 Fastest 4mm autoloader in the world	48GB		N/A	2699.95

APS SYQUEST DRIVES

Model	Capacity/Feature	Awards	Internal	SR2000
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APS SQ 5200 Ultimate storage flexibility	194MB	LABS	N/A	389.95

While supplies last! CALL NOW! SQ 270 Cartridge $59.95

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Model	Features	Awards	Internal	SR2000
APS T 3701 Sustained data transfer rates up to 1000KB per second!	6.7X-SPEED	NEW! LOW COST!	$249.95	$299.95
APS PD4 600MB optical storage with 4X CD-ROM in one device	CD-ROM/Removable Optical		N/A	499.95*
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APS CD-R Pro FREE TOAST CD-ROM Pro CD recording software ($500 value)	4X4 Performance CD-R		N/A	1999.95*
APS CD-R Mastering System 4X read/4X write recording engine and a 4GB AV scratch disk			N/A	2999.95†

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APS MO DRIVES

Model	Capacity/Features	Awards	SR2000
APS 230MB MO Olympus mechanism	4500 rpm drive	LABS	$449.95
APS 1.3GB MO Sony SMO F-531 mechanism	4MB cache		1699.95

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- ✔ New Quad-Speed DDS-2 drive cuts backup time in HALF!
- ✔ Up to 48GB of storage capacity

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- Listed capacities are formatted
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- Internal hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh where applicable. External SCSI-2 drives come with a premium SCSI cable, power cord and user guide.
- All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, and APS Technologies' APS PowerTools SCSI formatter/hard disk partitioner. You may need to install system software appropriate to your machine before use.
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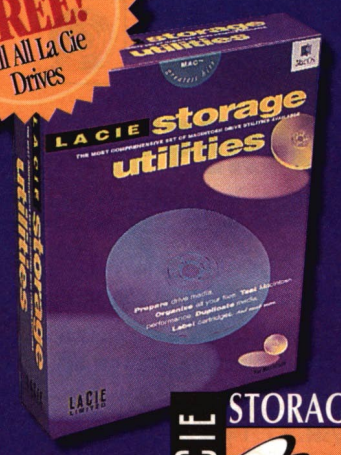

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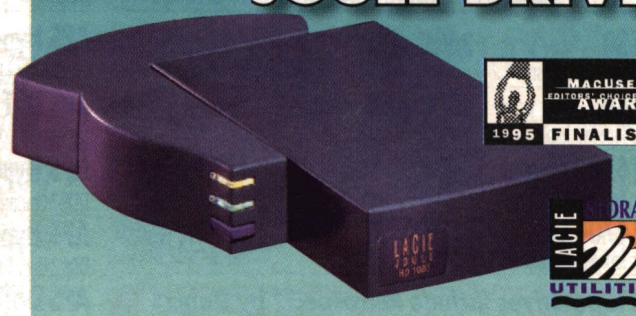

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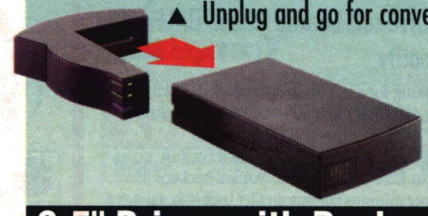

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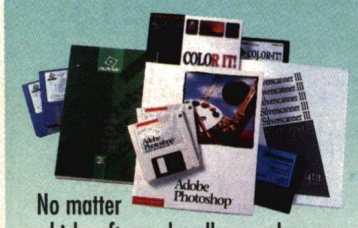

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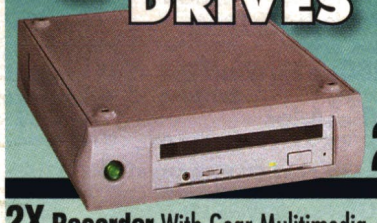

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	1080 MB Fireball			245	305
	11 ms Seek	5400 RPM	128K Buffer	3 Year Warranty	
	1280 MB Fireball II			265	325
	11 ms Seek	5400 RPM	128K Buffer	*5 Year Warranty*	
	2.2 GB Saturn			595	655
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	8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
	4200 MB Grand Prix			985	1045
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	4.3 GB Atlas			950	1010
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Toshiba 12 ms Seek	4500 RPM 128K Buffer	1 Year Warranty	
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Quantum2.0 GBAtlas		$735	$845
8ms Seek	7200 RPM 1024K Buffer	5 Year Warranty	
Conner 4.2 GB *Fast AV Performance!*		$1025	$1085
8 ms Seek	7200 RPM 1024K Buffer	5 Year Warranty	
Seagate 9.0 GB Fast & Wide Elite		$2195	$2325
11 ms Seek	5400 RPM 1024KBuffer	5 Year Warranty	

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	2.1 GB *Fast AV Performance!*			695	755
	8 ms Seek	7200 RPM	512K Buffer	5Year Warranty	
	2.1 GB *Fast & Wide -AV Performance*			825	925
	8 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
	4.2 GB *Fast AV Performance!*			1025	1085
	8 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
	4.2 GB *Fast & Wide -AV Performance*			1125	1225
	8 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	

MICROPOLIS

GOLD Series AV Drives *Recommended most for AV work*

	2.1 GB • *Also Available in Fast & Wide SCSI 2*			595	655
	Fast SCSI 2	8.5 ms Seek	7200 RPM	512K Buffer	5 Year Warranty
	4.3 GB • *Also Available in Fast & Wide SCSI 2*			1045	1105
	Fast SCSI 2	8.5 ms Seek	7200 RPM	512K Buffer	5 Year Warranty
	9.0 GB • *Also Available in Fast & Wide SCSI 2*			2045	2145
	Fast SCSI 2	11ms Seek	5400 RPM	512K Buffer	5 Year Warranty

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IBM drives utilize IBM's advanced Magneto-Resistive(MR) disk technology which increases the amount of data stored per disk surface and reduces the number of disks and heads making the IBM series more slim-lined , reliable & Faster

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	9 ms Seek	5400 RPM	128K Buffer	5Year Warranty	
√	**1080 MB DeskStar *MR Heads Fast!***			255	315
	10 ms Seek	5400 RPM	512K Buffer	5 Year Warranty	
	2.0 GB UltraStar ES *Value!*			495	555
	9ms Seek	5400 RPM	512K Buffer	5 Year Warranty	
	2.2 GB UltraStar XP *AV Performance!*			755	815
	7.5 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
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MacIntosh formatted capacities vary.. Call our hard drive experts!

FUJITSU

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	9 ms Seek	4500 RPM	256K Buffer	3 Year Warranty	
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	9 ms Seek	5400 RPM	512K Buffer	3 Year Warranty	
	2.1 GB			685	745
	8.5ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
	4.2 GB			1075	1135
	8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	

SyQuest TECHNOLOGY

DRIVES			CARTRIDGES	
Capacity	***Model***	***External***	***Capacity***	***Price***
88 MB	SQ5110C	$345	**44 MB**	$40
135MB	SQEZ135	225	**88 MB**	45
200 MB	SQ5200	395	**135 MB**	19
270 MB	SQ3270	405	**200 MB**	70
			270 MB	58

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Tape Backup Drives

All ProDirect Tape Drives Include The Latest Version of Retrospect and 1 Piece of Media.

HEWLETT PACKARD

Capacity	***Model***	***Media***	***Int.***	***Ext.***
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3-5 GB	35480	4mm	995	1055
4-8 GB	1533A	4mm	1235	1295
24-48 GB	1553A Auto Tape Loader		3195	3295

Exabyte

Capacity	***Model***	***Media***	***Int.***	***Ext.***
2-5 GB	8205XL	8mm	$1395	$1485
7-14 GB	8505XL	8mm	2055	2115

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SuperMac PressView 21 "Editors Choice"	$1999*

Radius PrecisionColor Display 21
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RasterOps SuperScan MC 21	$CALL
Radius Multiview 21	$CALL
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Best Screen Uniformity!

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RasterOps 20 Multimode	$1299
Radius PrecisionColor 19	$899*

Radius IntelliColor Display 20
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Ikegami 20 inch Grayscale Display	$699
Radius 20 inch Grayscale Display	$699

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"If you frequently need to retouch large image files in Adobe Photoshop using such filters as Gaussian Blur, Sharpen, and Emboss, then you need either to have the patience of Mother Teresa or a digital signal processor (DSP) board." –Macworld

Radius PhotoEngine from **$399***
• Four AT&T 3210 66MHz DSPs • Accelerates Photoshop Filters • Up to 15x acceleration on all Macs • MacUser Editor's Choice • Available in Daughtercard or NUBUS versions

Standard video cards do not provide acceleration for many critical Photoshop functions, because they do not have on-board Digital Signal Processors (DSPs). When installed in your system, DSPs are used by Photoshop to process time consuming commands more than 10-times faster than built-in video.
Greatest Improvement Areas:
• Filters such as those in the Sharpen and Blur submenus • Mode conversions such as RGB to CMYK color separations • Image transformations such as rotations, effects, and resizes.

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Stop wasting valuable time: Imagine using filters that normally take twenty minutes to process finishing in only two to four minutes! How much additional time would you save in just one week? You can't afford to be without DSPs.

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• Up to 12"x18" output • Dual-function dye sub and wax thermal • Editors Choice

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Star SJ-144MC
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Radius FPD Card	Mac Plus	Mono	–	–	–
Radius Pivot Card	SE/30	256	–	–	–
Xceed Color 30hr	SE/30	256	256	256	256
Lapis Color 16	SE/30	Thousands	Thousands	256	256
Lapis Color 24	SE/30	Millions	Millions	256	256
Radius Direct Color/gx	IIsi	Millions	–	–	–
SuperMac Spectrum 8	IIsi	256	256	256	256
SuperMac Spectrum 8.24	IIsi	Millions	256	256	256

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Radius FPD Card	Mac SE	Mono	–	–	–
SuperMac Superview	Mac SE	–	–	Mono	–
Radius TPD Interface	Mac SE	–	–	–	Mono
RasterOps 8/LC	LC/PDS	–	–	256	–
SuperMac Spectrum 8	LC/PDS	256	256	256	256
Lapis Color 16 for LC	LC/PDS	Thousands	Thousands	256	256
Micro Conversions 1724	LC/PDS	Millions	Millions	256	256
Lapis Color 24 for LC	LC/PDS	Millions	Millions	256	256

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Double Color SX	Nubus	256	256	16	–
RasterOps 708+	Nubus	256	–	256	–
RasterOps 24L	Nubus	Millions	–	–	–
RasterOps 8/LC	Nubus	–	–	256	–
SuperMac Spectrum 8	Nubus	256	256	256	–
Double Color LX	Nubus	256	256	256	256
Radius Direct Color 24	Nubus	–	–	–	Millions
E-machines Futura MX	Nubus	Millions	Millions	Millions	–

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CLUBMAC HARD DRIVES

Quantum

Internal Fireball C104 0001

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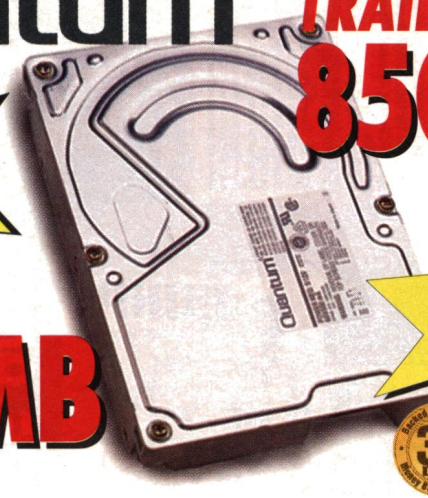

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12ms Access Time

$199

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BEST BUY

TRAILBLAZER 850MB

14ms Access Time

Internal TrailBlazer C104 0002

Capacity	Model	Part No.	Internal	Part No.	External
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1080MB	Fireball 12ms	C104 0000	$249	C104 0050	$309
1280MB	Fireball 12ms	C104 0001	$299	C104 0051	$359

BEST BUY

$969

ATLAS 4.3GB 7200 RPM 1024K CACHE

Internal Atlas C104 0005

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5 Year Manufacturer's Warranty

Capacity	Model	Part No.	Internal	Part No.	External
2200MB	Capella 8.5ms	C104 0003	$629	C104 0053	$689
2150MB	Atlas 8ms	C104 0004	$699	C104 0054	$1759
4300MB	Atlas 8ms	C104 0005	$969	C104 0055	$1029

Seagate

C104 0301 **$1199**

BARRACUDA 4 4.3GB

8.5ms average seek time

7,200 RPM

Backed by ClubMac's 30 DAY Money Back Guarantee

5 YEAR Warranty

3.5" HALF HEIGHT & LOW PROFILE (LP)

Formatted Capacity	Model	Part No.	Internal	Part No.	External
1.0GB	Medalist 51080N	C104 0302	$269	C104 0352	$329
2.1GB	Hawk 2 32430N	C104 0303	$689	C104 0353	$749
2.5GB	Barracuda 2LP 32550N	C104 0300	$769	C104 0350	$829
4.3GB	Barracuda 4 15150N	C104 0301	$1199	C104 0351	$1259

5.25" FULL HEIGHT

9.1GB	Elite-9 410800N	C104 0305	$2099	C104 0355	$2199

CLUBMAC FAST AND WIDE DRIVES

Quantum

5 Year Manufacturer's Warranty

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2200MB	Capella VP32210SW	C104 0100	$699	C104 0150	$799
4300MB	Grand Prix XP34301SW	C104 0101	$1029	C104 0151	$1129

Seagate

5 Year Manufacturer's Warranty

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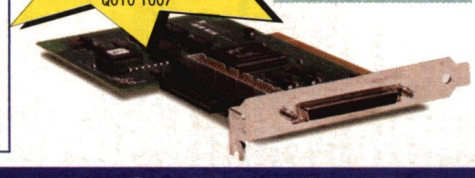
2.1GB	Barracuda 2LP ST32150W	C104 0400	$849	C104 0450	$949
4.3GB	Barracuda 4 ST15150W	C104 0401	$1279	C104 0451	$1379
9.1GB	ELITE 9 ST410800W	C104 0402	$2269	C104 0351	$2389

qlogic Corp.

$229

Q010 1007



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$179 C104 1500

ClubMac® 4X

Features:
600KB/sec data transfer
190ms avg access time
Caddy-less design

1 Year Manufacturer's Warranty

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C104 1500 **ClubMac QUAD-Speed CD-ROM Drive** $179

ClubMac®

		Access time	Trans Rate	
C104 1600	ClubMac Six-Speed CD-ROM Drive	140ms	900k/sec	$299
C104 1500	ClubMac Quad-Speed CD-ROM Drive	140ms	600k/sec	$179
C104 1400	ClubMac Classic 2X CD-ROM Drive	250ms	300k/sec	$99

NEC

		Access time	Trans Rate	
N024 1062	MultiSpin 6Xe CD-ROM Reader	150ms	900k/sec	$479
N024 1070	MultiSpin 4Xc 7 Disc Changer	350ms	600k/sec	$339
N024 1011	MultiSpin 3Xp plus Portable CD-ROM	240ms	500k/sec	$349

NEC

$339 N024 1070

MultiSpin 4Xc 7 Disc Changer Load 7 Discs at a time!

1 Year Manufacturer's Warranty

4X

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CLUBMAC REMOVABLE STORAGE

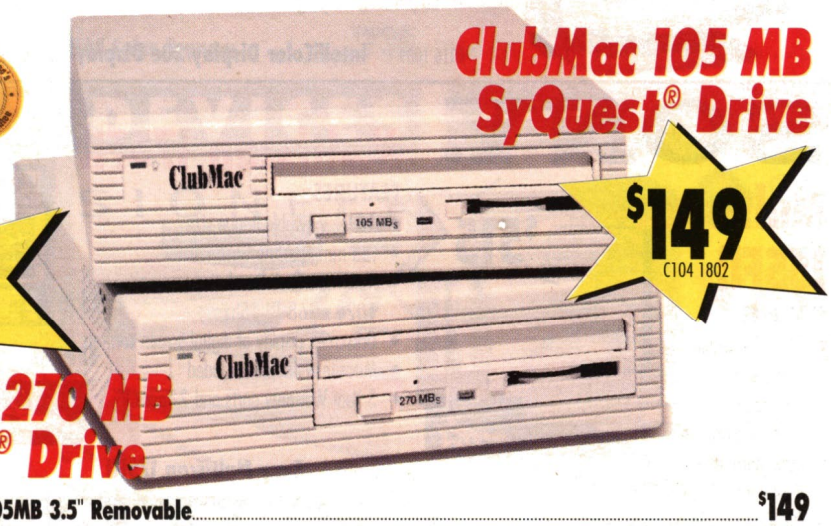
ClubMac 200 MB SyQuest® Drive

Mac OS COMPATIBLE

$349
C104 1801

C104 1801 **ClubMac 200MB 5.25" Removable** $349

ClubMac 105 MB SyQuest® Drive



Mac OS COMPATIBLE

30 DAY

$349
C104 1803

$149
C104 1802

ClubMac 270 MB SyQuest® Drive

C104 1803 **ClubMac 105MB 3.5" Removable** $149

C104 1802 **ClubMac 270MB 3.5" Removable** $349

SyQuest® EZ135 Drive

Includes One Free Cartridge

$199
S198 2001

30 DAY

Mac OS COMPATIBLE

EZ135 Drive

S198 2001 **SyQuest EZ135 135MB 3.5" Removable** $199

NEW LOW PRICES ON GENUINE SyQuest Cartridges

FEATURING SyQuest® REMOVABLE TECHNOLOGY

SyQuest 5 YEAR Warranty

SyQuest Media

Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$40ea	$39.50ea	$39ea
S198 1011	88MB	$44ea	$43.50ea	$43ea
S198 1012	200MB	$69ea	$68ea	$67ea
S198 1013	105MB	$35ea	$34.50ea	$34ea
S198 1014	270MB	$57ea	$56ea	$55ea
S198 2010	EZ135MB	$19ea	$18.50ea	$18ea

Zip Cartridge (100MB)		
I044 1006	1 Pack	$19.99
I044 1011	3 Pack	$49.99
I044 1010	10 Pack	$149.99

Zip Drive

Includes One Free Cartridge

1 Year Manufacturer's Warranty

$199.99
I044 1010

I044 1010 **Zip Drive with One 100MB Cartridge** $199.99

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Customer Service	M - F 7am - 5pm PST	(800) 551-6398
Technical Support	M - F 7am - 5pm PST	(800) 854-6227
24-Hour Fax		(714) 768-9354

- ClubMac hard drives include all cables, cords, leds, and brackets necessary for use with the Macintosh you specify. ClubMac formats all hard drives and installs Apple System 7.1 software, Charismac Anubis Driver, and PowerMerge LE.
- External drives include a Double Shielded, twisted pair 25-50 SCSI cable.
- ClubMac honors all original equipment manufacturers warranties. ClubMac will repair or replace drives at it's discretion. Drives returned within first 30 days of purchase are replaced with a new unit.
- All ClubMac hard drives include a 30 day money back guarantee. Your risk is the cost of shipping.

DISCOVER NOVUS VISA MasterCard AMERICAN EXPRESS Cards **NO SURCHARGE!**

Source Code 65156

ClubMac®

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7 Hammond, Irvine CA 92718

CLUBMAC TAPE STORAGE

ClubMac® Tape Back-Up Drives

2 Year Manufacturer's Warranty

30 DAY

C104 0900	ClubMac 2-4GB SCSI QIC MiniCartridge Drive (Cartridge not included)	$489
C104 1300	ClubMac 2.0GB ThunderDAT Drive	$749
C104 1301	ClubMac 4-8GB DDS-2 DAT Drive	$899
C104 1200	ClubMac 4-8GB DDS-2 SuperDAT Drive	$1059
C104 0200	ClubMac 40GB DLT Subsystem DLT 4000	$4999
S100 1043	Sony QW3080XLF QIC/WIDE 2-4GB Cartridge	$29
V010 1018	Verbatim 90M 4mm DAT Cartridge 2-4GB	$9
Q034 1022	1/2 inch media for DLT 4000	$99

DDS-2 DAT Drive

$899
C104 1301

Includes One Free DAT Tape

Mac OS COMPATIBLE

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1-800-258-2622 CLUBMAC 1-800-258-2622 1-800-258-2622

MONITORS

NEC

17" MultiSync XV17+

FEATURES
- 17" Flat Square Technology CRT
- 15.6" Viewable Image Size
- MAC Resolution up 1024 x 768 NI
- 0.28 mm dot pitch
- On-Screen Manager

N026 1032 **17" MultiSync XV17+** $799

21" MultiSync XE21

FEATURES
- 21" Diagonal Flat Square Screen
- 19.8" Viewable Image Size
- MAC Resolution up to 1152 x 870 NI
- 0.28 mm dot pitch
- AccuColor, Digital controls
- Monitor Manager

N026 1010 **21" MultiSync XE21** $1799

15" MultiSync XV15+

FEATURES
- 15" Flat Square Technology CRT
- 13.8" Viewable Image Size
- Max Resolution: 1024 x 768
- 0.28 mm dot pitch

N026 1031 **15" MultiSync XV15+** $469

15" C500 Monitor

- 15" Flat Square, AntiStatic, Non-glare CRT
- 13.8 Viewable Image Size
- Max Resolution: 1024x768
- .28mm dot pitch
- On screen controls
- ONE year Warranty

NEW PRODUCT

N026 1033 **15" C500 Monitor** $399

14" C400 Monitor

- 14" AntiStatic, Non-glare CRT
- 13.2" Viewable Image size
- .28mm dot pitch
- Max Resolution: 832x624
- ONE year Warranty

NEW PRODUCT

N026 1029 **14" C400 Monitor** $299

radius

PressView 21SR Display System

FEATURES
- Resolution up to 1600 x1200
- 21" .25m high performance DiamondTron display
- Exclusive light-absorbing "Stealth" coat that improves the displays color and contrast by preventing the user's clothing from reflecting off the CRT.
- Includes ProSense display Calibrator, ColorShield™ Hood and Display management software version 1.6.
- Color management support for AGFA FotoTune 1.0 & 2.0, Apple colorSync 1 & 2, EFIColor, and Kodak Precision.

R016 1034 **PressView 21SR Display System** $3199

R016 1031 **PressView 17SR Display System** $1999

IntelliColor Display/20e

FEATURES
- Preset resolutions: 640 x 480 at 60Hz up to 1380 x 1040 at 74hz
- 20-inch Trinitron, vertically flat tube
- 15.2 in x 11.5 in maximum viewing area
- 0.31mm Phosphor Trio Pitch
- 10 pre-sets, 15 programmable settings

BEST BUY

R016 1009 **IntelliColor Display/20e Display System** $1799

SONY.

Multiscan 15SFII

FEATURES
- 13.9" Viewable image size
- .25 mm Aperture Grille Pitch
- Max Macintosh Resolution: 1024 x 768 ™ 75hz
- On screen display of digital screen controls
- 3 Year Warranty parts and 2 Year CRT

S106 1017 **Sony Multiscan 15SFII** $515

Multiscan 17SFII

FEATURES
- 16.0" Viewable image size
- .25 mm Aperture Grille Pitch
- Max Macintosh Resolution: 1024 x 768 ™ 75hz
- On screen display of digital screen controls
- Macintosh Adapter included
- 3 Year Warranty parts and 2 Year CRT

S106 1018 **Sony Multiscan 17SFII** $915

MEMORY

32MB 8x32 SIMM

M101 1070 **32-Bit 72 Pin Simm 8x32** $599

OTHER MEMORY AVAILABLE! CALL FOR BEST PRICE.

VIDEO CARDS

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Thunder 30 PCI Cards

- 30-bit color with built-in photoshop Acceleration
- Real-time CMYK-to-RGB display
- On-the-fly resolution and bit-depth switching

R013 1070 **Thunder 30/1152** PCI Card $799
Resolution up to 1152 x 870

R013 1073 **ThunderColor 30/1600** PCI Card $1999
Resolution up to 1600 x 1200

XCLAIM GA

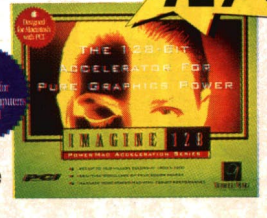
ATI's renowned *mach64* graphics acceleration chip gives the XCLAIM GA its exceptional abilities. It features 2MB or 4MB of VRAM,& displays up to 16.7 million accelerated colors at 1152x870 resolution.

A143 1010 **ATI XCLAIM GA** 2MB PCI video card $369

A143 1009 **ATI XCLAIM GA** 4MB PCI video card $499

NUMBER NINE VISUAL TECHNOLOGY

Imagine 128



- 128-bit graphics engine
- 128-bit internal data path
- 128-bit memory bus
- Exclusive WideBus™ design means drawing pathways are a full 128-bits wide from processor to high speed VRAM

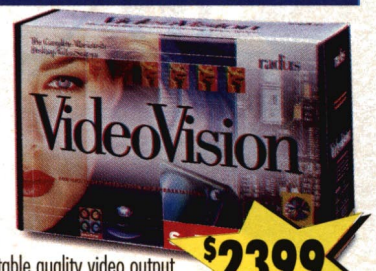
N080 1002 **Imagine 128** 8MB Accelerator $1169

N080 1003 **Imagine 128** 4MB Accelerator $729

DIGITAL VIDEO

radius

VideoVision Studio 2.5.1



Broadcast-Quality Video
VideoVision studio can deliver broadcastable quality video output in NTSC and PAL timing.

16-bit Audio
VideoVision Studio can now simultaneously capture video with 16-bit, 44.1 KHz stereo sound using the on-board audio of the Power Macintosh.

R013 1018 **VideoVision Studio 2.5.1** $2399

Radius Telecast Upgrade

Telecast combines component video, professional audio with an open architecture to give video professionals hardware and software choices. Telecast reinvents the entire post production process providing options for producing quality programming in a variety of formats.

R013 1077 **Telecast Upgrade** $3459

TRUEVISION

Targa 1000

Digital Video Editing

Transform Your Desktop Computer into a Powerful Digital Video Editing System.

...Easily and Affordably!

T043 1003 **Targa 1000** (PCI Power Macintosh) $2699

T043 1001 **Targa 2000** (PCI Power Macintosh) $2995*
(* as low as $2995 w/qualified trade-in)

ACCELERATORS

DAYSTAR DIGITAL

66MHz Turbo 601

5 Year Warranty 30 DAY Money Back Guarantee

Mac IIci, IIsi, IIvx, Performa 600

Runs your current software up to twice as fast, and it lets you run PowerPC accelerated applications 7 to 11 times faster.

D040 1039

100MHz PowerPro 601

Quadra and Centris (610, 650, 700, 800, 900, and 950 series)
- Transforms your Mac into a top of the line PowerPC workstation
- Works with your current memory
- 64-bit data path further increases performance
- Requires System 7.5

D040 1018 **40/Mhz Turbo 040** with 128K cache $599

D040 1043 **100Mhz PowerPro 601** with 1MB cache $1199

D040 1048 **100Mhz Turbo 601** $1139

MicroMac Technology

Carrera040

NEW PRODUCT

MAC IIci, IIisi, IIcx, or IIx
Just plug in the Carrera040 accelerator and instantly get blazing performance from your existing Mac

M264 1003 **40/80Mhz Carrera 040** with FPU $599

SCANNERS

ES1200C Pro EPSON

FEATURES
- 600 dpi optical resolution, and up to 4800 dpi(via interpolation)
- 30-bit color scanning
- Pro Package includes:
  Adobe Photoshop
  Scantastic
  KAI's PowerTools
  SCSI cable

E045 1003 **Epson ES1200C Pro-MAC Color Scanner** Full Package **$1179**

E045 1007 **Epson ES1200C LE-MAC Color Scanner** w/Scantastic **$949**

Epson ES1000C

FEATURES
- 400 dpi optical resolution, and up to 3200 dpi(via interpolation)
- 30-bit color scanning
- Package includes:
  Adobe Photoshop LE 3.0
  Xerox TextBridge
  SCSI cable
  Scantastic PIM & DA

E045 1013 **Epson ES1000C LE-MAC Color Scanner** **$735**

Powerlook II UMAX

The Magic of Color™

FEATURES
- 36-bit color scanning, 600 x 1200 dpi
- 3.3 Dynamic Range
- Includes Transparency Adapter
- Package includes:
  Adobe Photoshop
  KAI's PowerTools SE
  PowerPhotos CD
  WordLinx OCR
  Pixar Typestry
  Pixar 128CD

U010 1052 **PowerLook II** 36-bit color scanning, 600 x 1200 dpi **$2495**

Umax Vista-S12 LE

FEATURES
- 600 dpi & 33-bit equivalent analog gamma correction
- Package includes Adobe Photoshop LE 3.0, WordLinx OCR, Corel Professional Photos CD

U010 1055 **Vista-S12 LE** **$799**

Arcus II AGFA

FEATURES
- 600 dpi & 36-bit color scanning
- 3.0 Dynamic Range
- Includes Transparency Module
- Package includes:
  - Adobe Photoshop
  - Agfa FotoLook Scanner driver software
  - Agfa FotoTune Color Management software
  - "How To" Guide to Scanning

A055 1001 **AGFA Arcus II** **$2195**

MICROTEK ScanMaker III

Better Images Through Innovation.

FEATURES
- 600 dpi & 36-bit color scanning
- Includes Transparency Adapter
- Single pass scanning
- DCR (Dynamic Color Rendition) calibration/correction system
- Apple ColorSync compatible
- Package includes Adobe Photoshop

M150 1006 **Microtek ScanMaker III** **$1989**

INPUT DEVICES

VISIONEER PaperPort Vx

FEATURES
- 6 second typical scan time
- 400 dpi resolution
- 256 Gray-scale imaging
- Scan Documents up to 30" long
- Includes OmniPage Lite, CardScan SE, PictureWorks Copier

V029 1008 **PaperPort Vx for Macintosh** **$279**

WACOM Art Z II 6" x 8" ArtPad

Don't buy a tablet that uses batteries...get a WACOM

W010 1028 **ArtZ II 6x8** **$298**

MODEMS

GLOBAL VILLAGE COMMUNICATION TelePort Platinum Fax/Modem

G050 1016 **TelePort Platinum** 28.8 data, 14.4 S/R, GlobalFax, GlobalFax OCR **$199**

US Robotics 28.8 Sportster

The Intelligent Choice in Data Communications

FEATURES
- 28.8 V.34 and 33.6 kbps
- V.32 bis at 14.4 kbps
- V.42/mnp 2-4 error control
- Macverter Fax and Data Software
- CD-ROM containing Internet Access Software
- Discover the World Wide Web with your Sportster Guidebook

U020 1021 **US Robotics 28.8 Sportster for Mac** **$199**

PowerPort Pro PC Card

Simultaneous 28.8 10BT Ethernet

G050 1019 **PowerPort Platinum Pro** **$499**
Combo 10base-T Ethernet, 28.8 data, 14.4 S/R, Fax, Type II PC Card

FastMac V.34 28.8 Fax/Data Modem

FEATURES
- 28.8 kbps data modem
- 14.4 kbps send/receive fax
- Class 1 or 2 fax support
- V.42/MNP2-4 error control
- V.42bis/MNP5 data compression
- MacComCenter software for Mac

B030 1007 **Fast Mac V.34 28.8 bps Fax/Data Modem** **$139**

PRINTERS

EPSON Stylus Color Pro

FEATURES
- 720 x 720 dpi photo quality on plain paper
- PostScript upgradeable
- True black laser quality text
- Pantone matching
- Text print speed up to 3ppm, color 1ppm

E047 1019 **Epson Stylus Color Pro** **$599**

E040 1069 **Adobe PostScript Level 2** Software Upgrade for Stylus Color Pro **$199**

HEWLETT PACKARD LaserJet 5MP

FEATURES
- 600 x 600 dpi laser printing with HP Resolution Enhancement technology
- 120 levels of grey
- 6 ppm print speed
- 3MB RAM standard, expandable up to 35 MB w/Adobe Memory booster
- Adobe PostScript level 2 with 35 scale typefaces

H047 1030 **HP LaserJet 5MP Printer** **$1045**

Epson Stylus Color Pro XL

FEATURES
- Prints up to 12.5" x 18" full bleed in Photoquality color
- 720 x 720 dpi photo quality with Microdot technology
- Optional Adobe PostScript with Pantone Color Calibration

E047 1022 **Epson Stylus Color Pro XL** **$1799**

E040 1070 **Adobe PostScript Level 2** Software Upgrade for Stylus Pro XL **$265**

HP DeskJet 850C InkJet

FEATURES
- ***COLOR PRINTER***
- Dual I/O for either PC or Macintosh connection
- Black print speed up to 6ppm
- Color print speed up to 2ppm
- Handles plain and special papers, transparency film, envelopes, avert labels and index cards.

H047 1041 **HP DeskJet 850C InkJet Printer** **$515**

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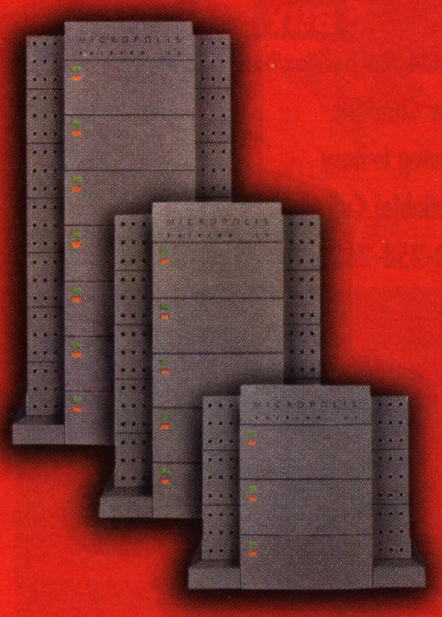
*7200 RPM
*512 K Buffer
*5 - Year Warranty
*Internal Configuration



MICROPOLIS MICRODISK LT & LS

THE STACKABLE, REMOVABLE DRIVE SUBSYSTEM

Model #	Capacity
MDLT2100/AV	2.1 GB
MDLT4300/AV	4.3GB
MDLS9100/AV	9.1GB

NOW AVAILABLE IN FAST/WIDE CONFIGURATION.
ASK ABOUT THE MICRODISK RAID 5 ARRAY!

CALL FOR LATEST PRICING AND CONFIGURATION

HARD DRIVES

ALL DRIVES ARE PREFORMATTED, TESTED AND PACKAGED WITH SCSI MANAGER 4.3 COMPATIBLE DRIVERS. EXTERNAL DRIVES INCLUDE CHOICE OF 25-50 OR 50-50 PIN CABLE.

Capacity	Model No.	Mechanism	Seek	Warranty	Internal	PHASER-I
420 MB	DT-420TB	Quantum	11ms	2 yrs	$150	$225
850 MB	DT-850TB	Quantum	11 ms	2 yrs	$199	$275
1.05 GB	DT-51080	Seagate NEW LOW PRICE!	10.0 ms	5 yrs	$269	$344
1.0 GB	DT-1080FB	Quantum	11ms	3 yrs	$269	$344
1.05 GB	DT-31230	Seagate NEW LOW PRICE!	9.0 ms	5 yrs	$380	$455
2.0 GB	DT-4221	Micropolis NEW LOW PRICE!	8.0 ms	5 yrs	$545	$625
2.0 GB	DT-2490	Hewlett Packard	9.0 ms	5 yrs	$950	$1,050
2.1 GB	DT-32550	Seagate Barracuda II NEW LOW PRICE!	8.0 ms	5 yrs	$725	$800
4.3 GB	DT-3243	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$999	$1,075
4.3 GB	DT-15230	Seagate Hawk 4 NEW PRODUCT!	9.0 ms	5 yrs	$899	$975
4.3 GB	DT-15150	Seagate Barracuda NEW LOW PRICE!	8.0 ms	5 yrs	$1,175	$1,250
9.0 GB	DT-1991	Micropolis NEW LOW PRICE!	12 ms	5 yrs	$1,950	$2,050
9.0 GB	DT-410800	Seagate Elite 9 NEW LOW PRICE!	11 ms	5 yrs	$2,025	$2,125

AUDIO/VIDEO TUNED DRIVES

DIRECTTECH SYSTEMS IS AN AUTHORIZED A/V PARTNER WITH SEAGATE AND MICROPOLIS.

Capacity	Model No.	Mechanism	Seek	Warranty	Internal	PHASER-I
1.05 GB	DT-31230AV	Seagate	9 ms	5 yrs	$380	$455
2.0 GB	DT-4221AV	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$600	$775
2.1 GB	DT-32550AV	Seagate Barracuda	8.0 ms	5 yrs	$725	$800
4.3 GB	DT-3243AV	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$1,050	$1,125
4.3 GB	DT-15150AV	Seagate Barracuda	8.0 ms	5 yrs	$1,175	$1,250
9.0 GB	DT-1991AV	Micropolis NEW LOW PRICE!	12 ms	5 yrs	$2,050	$2,150
9.0 GB	DT-410800AV	Seagate Elite 9 NEW LOW PRICE!	11 ms	5 yrs	$2,025	$2,125

FAST/WIDE SCSI DRIVES

MOST EFFECTIVE WHEN COMBINED WITH A FAST/WIDE ATTO BOARD. CALL FOR SPECIAL CONFIGURATIONS!

Capacity	Model No.	Mechanism	Warranty	Internal	PHASER-I
2.1 GB	DT-32550W	Seagate Barracuda 2LP Wide	5 yrs	$799	$899
2.1 GB	DT-4221W	Micropolis 4221Wide	5 yrs	$625	$725
4.3 GB	DT-15150W	Seagate Barracuda 4 Wide	5 yrs	$1,225	$1,325
4.3 GB	DT-3243W	Micropolis 3243Wide	5 yrs	$1,050	$1,150
9.0 GB	DT-1991W	Micropolis 1991Wide	5 yrs	$2,085	$CALL
9.0 GB	DT-1991AVW	Micropolis 1991AVWide	5 yrs	$2,185	$CALL
9.0 GB	DT-410800W	Seagate Elite 9 Wide	5 yrs	$CALL	$CALL

DISK ARRAYS/RAID

MEDIA 100 * RADIUS * DIGITAL VIDEO * TARGA 2000
ARRAYS INCLUDE - ATTO CARD, REMUS & 2 FAST/WIDE DRIVES

Capacity	Model No.	Mechanism	Seek	Warranty	EXTERNAL
4.0 GB	DT-32550W-2	Seagate - Fast/Wide Barracuda 2LP (2)	4.0 ms	5 yrs	$CALL
8.0 GB	DT-3243WAV	Micropolis - Fast/Wide 3243AV (2)	4.0 ms	5 yrs	$CALL
18.0 GB	DT-1991WAV	Micropolis - Fast/Wide 1991AV (2)	4.0 ms	5 yrs	$CALL
		CALL FOR MORE INFORMATION ON DIRECTTECH DISK ARRAYS!			
ATTO Silicon Express IV		Nubus Fast/Wide Accelerator			$CALL
ATTO Express PCI		Dual Channel - PCI -Fast/Wide			$CALL
ATTO Express PCI		Single Channel - PCI-Fast/Wide			$CALL

SYQUEST

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Internal	PHASER-I
88 MB	SQ5110C	$305	$365
200 MB	SQ5200	$420	$480
270 MB	SQ3270	$420	$470

CD ROM RECORDABLE

JVC Personal Archiver (2X)	$1,165
JVC Personal Archiver (4X)	$2,499
Yamaha CD Recorder (4X)	$1,699

NEW PRICING

TAPE

INCLUDES A FREE COPY OF RETROSPECT AND ONE TAPE

Capacity	Model No.	Format	PHASER-I
2 GB	HP-35470	4mm	$950
4-8 GB	Sony-5000	DDS-2	$999
4-8 GB	HP-1533A	DDS-2	$1,250
5-10 GB	Exabyte-8505	8mm	$2,150
15-30 GB	DLT-2000XT	DLT	$4,399

OPTICAL

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Seek	PHASER-I
230 mb	Fujitsu	30 ms	$675
1.3 GB	HP-C1716	23 ms	$1,999
1.3 GB	Maxoptix T-III	18 ms	$2,199

MEDIA

Type	Price
Syquest 44	$40
Syquest 88	$46
Syquest 105	$54
Syquest 200	$76
Syquest 270	$60
Optical 128 MB	$22
Optical 230 MB	$30
Optical 1.0 GB	$100
Optical 1.3 GB	$90

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Seagate
HEWLETT PACKARD
Quantum
SyQuest
JVC

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MAC Xtra DISCOUNTS

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4MB 80NS $88!

1MB 100NS $30
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PowerMac Memory Selection Guide

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24MB	(2) 8MB 70/60NS
40MB	(2) 16MB 70/60NS
72MB	(2) 32MB 60NS
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264MB *(7100 only)*	(8) 32MB 60NS

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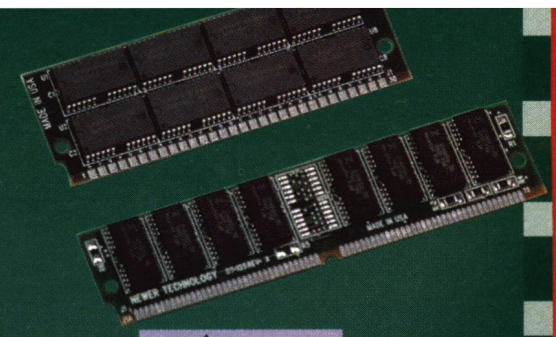

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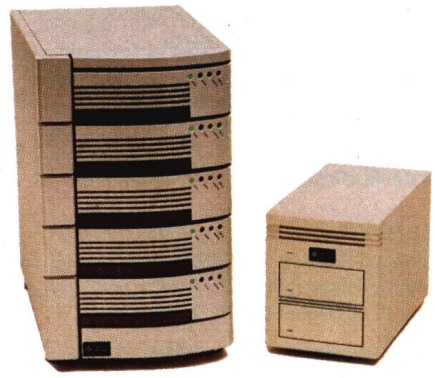

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ADVERTISERS' INDEX

Hardware

(Includes Bar Coding, Boards, Communications/Networking, Computer Systems, Peripherals, Used Equipment)

Boss Microelectronics 61
Boxlight Corporation 56
Chip Merchant 56
Compu America 64
Compu Concepts 65
Compu USA 66
Computer Add-Ons 65
Computer Guys 64
Data Computer Center 65
Data Memory Systems 61
Datatech Remarketing 67
Diamond Computer Resources 61
Dvc/Digital Video Concepts 56
Eritech International 61
GE Capital CRS 68
Griffin Communications Co. 67
ICN 66
Immaculate Consulting 67
Infinity Micro Computers 64
Innovative Micro Products 61
Intermark Technologies 61
Kelley Computers 66
LA Computer Center 57
Mac 1 International 65
Mac Base 57
Mac Net 57,66
Mac Rentals 67
Mac Resq 66
Mac Sale International 59
Macadapt 66
Macstorm International 64
Macworks 65
Maxed Systems 68
Media Guide 65
Media Store 67
Memory Merchants 66
Micro Products 64
MPD 58
Other World Computing 67
Peripheral Outlet 55
Peripherals & Systems 4 Export 67
Pre-Owned Electronics 68
Promax 56
Que Computers 65
Right Computer 64
Shreve Systems 62,63
Simm Saver Technologies 55
Sonnet Technologies 55
Source Computing 61
Starlight Technology 61
Syzygy Electronics, Inc 56
Tahoe Peripherals 54
T.D. Curran 66
V.L. Promac 65
World Micro Systems 65

Software

(Includes Bar Coding, Business Management, CAD-CAM, Communications/Networking, Desktop Publishing, Education, Finance, General, Graphics, Multimedia)

A1 Computers 69
ACI US, Inc. 60
APT Communications, inc. 53
Digitool 60
Miramar 53
Software Architects 53
Tenon Intersystems 60
Vicom Technology 69

Special Services

(Includes Digital Output Services, Disk Duplication, General, Graphics, Programming/Consulting, Rental/Leasing, Repair/Recovery Services, Toner Recharging, Training)

3E Corp. 67
800wefixmacs 68
Data Recovery technology 68
Drivesavers 68
Dt&t Macintosh Services 67
Isomedia 68
Lazarus Data Recovery 68
Micro Com 68
OnTrack Data Recovery 68
Tellan Software 69
Total Recall 68

Accessories

Microstore 69

Career Opportunities

Educational Management Group ...69
Macxperts, Inc. 69
Oral B Laboratories 69
Scientific Placement 69

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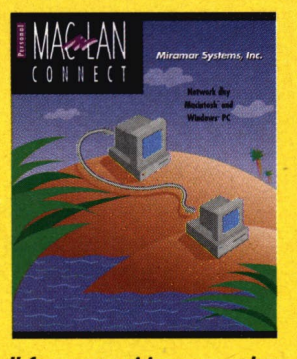

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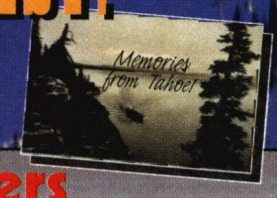

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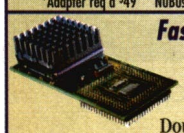

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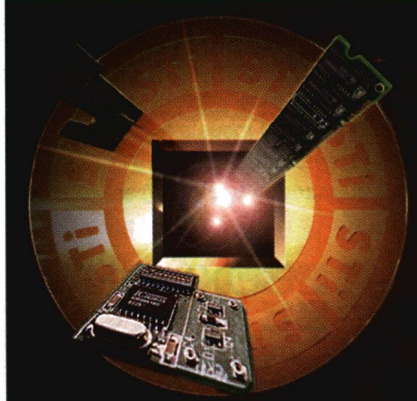

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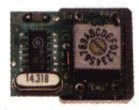

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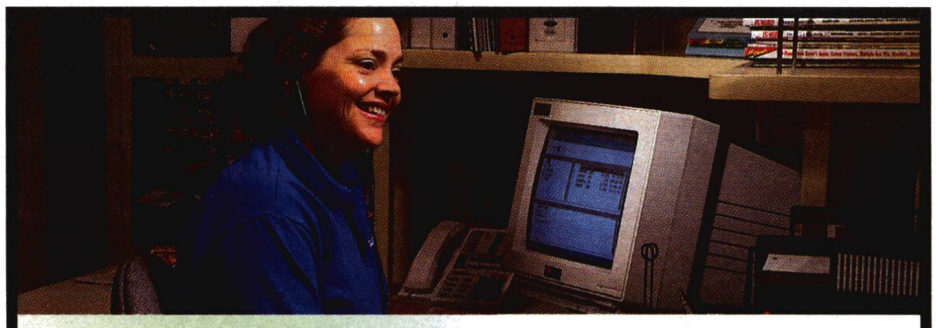

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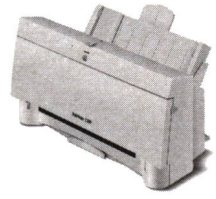

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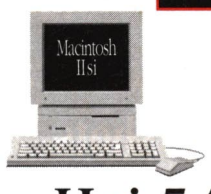

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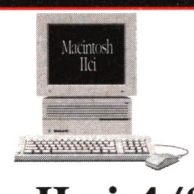

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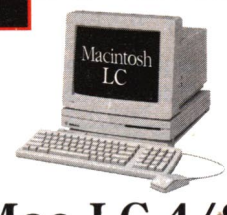

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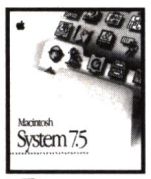

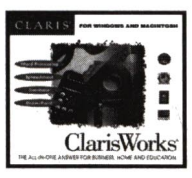

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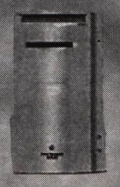

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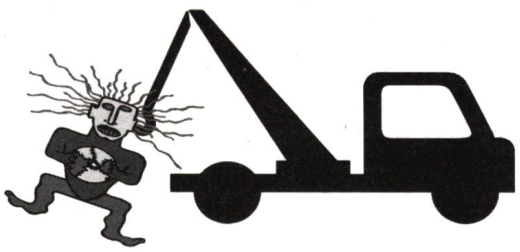

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- Global Village Bronze Faxmodem

SOFTWARE:

- System 7.5 CD
- ClarisWorks 3.0 CD
- Sierra Club: The Blue Whale CD
- Wacky Jacks CD Game Show
- 10 Manmade Wonders CD
- FontsPro CD w/1555 fonts

EDUTAINMENT SOFTWARE:

- Peter's Magic Adventure CD
- The Math School
- First Lessons In Math
- The Talking Spelling Bee
- The Talking Alphabet Bee
- The Talking Math Bee
- Unscramble Word Game
- Operation Diva
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- AppleDesign Extended Keyboard
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- Global Village Bronze Faxmodem
- Built-in speakers

SOFTWARE:

- System 7.5 CD
- ClarisWorks 3.0 CD
- Sierra Club: The Blue Whale CD
- Wacky Jacks CD Game Show
- 10 Manmade Wonders CD
- FontsPro CD w/1555 fonts

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- The Talking Alphabet Bee
- The Talking Math Bee
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SHREVE Systems

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- 25MHz MC68LC040
- 4MB RAM
- 240MB hard drive
- 4-bit gray, passive matrix
- maximum RAM: 36MB
- 16-bit stereo sound output

PRE-LOADED SOFTWARE:

- System 7.5
- ClarisWorks 3.0

SUGGESTED ACCESSORIES:

- canvas carrying case: $19
- numeric keypad: $29
- modem-CALL FOR PRICING
- HP DeskWriter 310: $229

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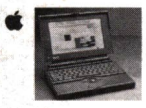

- factory refurbished
- 33MHz MC68030
- 4MB RAM
- 120MB hard drive
- 2-bit gray, passive matrix
- maximum RAM: 40MB

PRE-LOADED SOFTWARE:

- System 7.1
- ClarisWorks 3.0

SUGGESTED ACCESSORIES:

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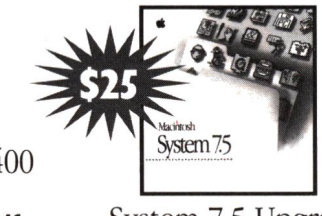

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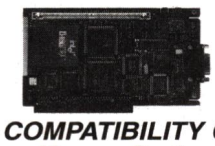

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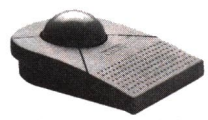

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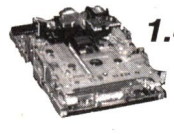

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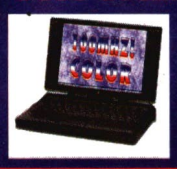

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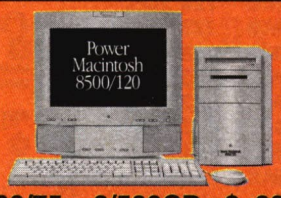

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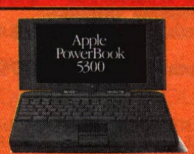

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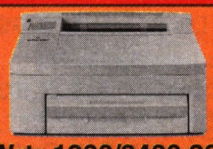

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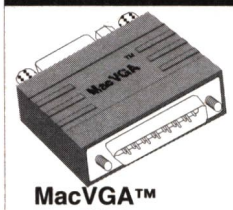

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Quality

From Page 1

tioning the wisdom of having Apple as our sole CPU vendor," he said.

Inigo C. Figuración, managing editor of the San Diego State University Magazine, said he had more problems in the past few months than ever before. "Couple the horrible System 7.5.2 with the equally atrocious Open Transport 1.0x, and I felt like I was operating a Windows machine."

Figuración said that the recent System 7.5 Update 2.0 "pretty much eliminated" the freezes and crashes, although other users have reported problems, chiefly with the installation of the update.

Paul R. Potts, software engineer at the University of Michigan's Comprehensive Cancer Center in Ann Arbor, said that "installing the [update] itself was extremely difficult and time-consuming, and involved numerous crashes and lockups and several reinstalls."

Potts added that he felt Apple did "an extremely poor job of quality-control testing" for the first round of PCI Power Macs. "These machines had the worst out-of-box crashing of any systems I've used, and I've used every generation of Apple hardware."

Apple recognizes the users' concerns. "There are some quality problems," Forsyth told MacWEEK last week, pointing to hardware changes — including faster processors, more sophisticated users and shorter product life cycles — that affect both the Mac and Intel-standard PC markets.

To address the recurring quality issues, Forsyth said Apple in January established a Quality Council comprising decision makers from the company's engineering, manufacturing, testing, product marketing and customer service groups.

"Now when a problem comes up, there's an action plan, and they jump on it," Forsyth said. "I feel confident that we'll quickly put problems behind us and be able to resolve them more quickly in the future. Quality has been a core part of our roots — it's in the genes of the organization."

One of the Quality Council's goals is to enhance communication, an issue that users highlighted. Rodney Everett, an engineer at a large Midwestern manufacturer, said he made several calls about his machine to Apple before technicians admitted to problems.

"Apple has not made an effort to notify Performa 6300 owners about problems, with the official line being that it was something that the owner must have done to the computer that made it unstable," Everett said.

Forsyth said that Apple will be more proactive about notifying customers of problems and their resolutions in the future (see story, below left).

For some users, however, the perceived decline of Apple's quality assurance efforts is leading them to consider Windows.

Ase Zachrisson, a registered nurse in Göteborg, Sweden, said, "The way Apple has been neglecting reliability, quality and the average small customer makes me seriously consider getting a Wintel machine the next time."

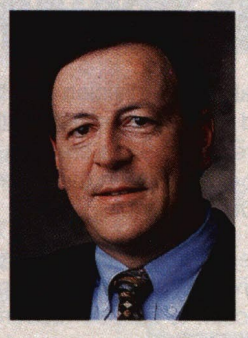
The city of San Francisco's German concurs. "We're [Apple's traditional] strength — we're a graphics and publishing operation, but I have to look at the bottom line."

However, the University of Michigan's Potts has seen a change that he said augurs well for Apple's future.

"It seems to me that Apple has already [become] more focused on the pursuit of real quality and putting real dollars and staff time into quality assurance. I think the next round of Apple hardware will reflect that," he said. □

Forsyth outlines steps to bolster reliability

Extended beta testing and a new Quality Council are two key parts of Frederick Forsyth's plans to improve the reliability of Apple's hardware and software.



Fred Forsyth is the man with the plan to resolve Apple's quality issues.

CEO Gilbert Amelio deputized Forsyth, Apple senior vice president for worldwide operations, to oversee quality-assurance efforts.

Forsyth said: "[Amelio] doesn't care what the cause is — supply problems, design problems, manufacturing, service, distribution. He's looking across the organization to ensure we have the processes in place for resolution."

According to Forsyth, one way to improve quality control is to augment the testing process with more input from outside sources. In the wake of public beta tests of Open Transport and OpenDoc, Apple said it will continue the trend with a public beta of Copland, its next major OS release. Nancy Morrison, an Apple spokeswoman, said, "It won't be really widespread, but there will be a seeding program for customers."

But Forsyth said: "We're looking to find beta sites. We want to get a broader base of users to test things. [That's] clearly required for major changes. We want to get some educational institutions and developers."

An increased focus on quality is reflected in recent Apple actions. The company reportedly delayed the release of faster Power Mac models, now due at the end of the month, to ensure the machines will work properly when released. — *By Joanna Pearlstein and Kelly Ryer*

Help, Apple style

Apple's technical support can be reached at (800) 767-2775. Users can search Apple's technical information library at http://til.info.apple.com/til/til.html.

Memo

From Page 1

flashlights that have a reputation for high quality, but carry a premium price.

"We simply cannot compete dollar for dollar with Compaq [Computer Corp.], Gateway 2000 [Inc.], or (name your own clone maker), due to our larger R&D budget," the memo stated.

Amelio, according to the memo, said that a new emphasis on quality will fuel the strategy and that software stability will be its launching pad. The attendee stated that Amelio agreed that true memory protection was needed to achieve stability and that numerous system software variants bogged down development.

According to the message, "[Amelio] said that it had been estimated that for all combinations of form factors, [application-specific integrated circuits], and revisions, we must support something like 100,000 unique configurations, with a potentially different OS for each. He says that that will change."

The anonymous writer said Amelio had addressed Apple's plans for Newton but admitted to being on the fence about how to treat it. "But the thrust was to not only keep it within Apple, but possibly bring it even closer inside Apple, and give it the support it needs," the message said.

Apple spokeswoman Lynne Keast confirmed that the memo was authentic and had come from an Apple employee, but she downplayed its importance. "It was simply an employee's account of their meeting with Dr. Amelio. It was not Gil laying out the corporate strategy," she said.

MacWEEK Online

posted the memo in its entirety last week and solicited readers' thoughts on its contents. The responses covered the gamut, but most said that such openness by the company's new CEO — and by Apple for releasing the memo — was an encouraging sign.

"It sounds like Mr. Amelio has a clue, unlike recent Apple management," said Greg Olson, senior software analyst at Unisys Corp. of Portland, Ore. "Reasonable premium pricing should not be a drawback for Apple so long as their products are perceived as having a greater value than their Wintel competitors."

Thomas Scott, a Mac dealer at Future Shop in Vancouver, British Columbia, said Apple should hold off a while before implementing its premium pricing strategy.

"Until a fully ramped Mac OS clone industry is able to meet *all* price points, Apple will have to do so, and will have to match speed, capacity and bundling options on a system-by-system basis in relation to similarly equipped [Intel-standard] PCs."

David Coursey, editor of P.C. Letter, a San Mateo, Calif.-based industry newsletter, was less encouraged. He said he felt a strategy drawn from a comparison to MagLite may sound good in a speech, but it falls apart once you scratch the surface. "The problem with this analogy is that Apple is no longer the quality leader," Coursey said.

Users and dealers have echoed this sentiment vehemently (see story, Page 1).

Unisys' Olson said, "I find the reports of quality glitches in Power Macs and 7.5.x far more worrisome than reports of quarterly losses." □

Reply

From Page 1

dresses for their Mac and DOS or Windows environments. A $195 version for existing Apple and Reply cards will ship this month.

Users will be given their choice of a Microsoft Corp. operating system, including Windows NT; the PCI cards will also support IBM Corp.'s OS/2.

Reply said it will ship a limited number of units in June; volume production will begin in July. Pricing has not been determined, but the cards are expected to start at $895.

Using software and hardware designs licensed from Apple, Reply currently offers cards for most Centris, Quadra and pre-PCI Power Mac models and Mac clones. But for PCI Macs, Reply said it developed its own hardware and extensively rewrote Apple's software.

While current cards, even in Power Macs, rely heavily on software written in 680x0 assembly language, the new Reply software is completely native on PowerPC systems. It will use Apple's new Copland-ready driver model and will support Open Transport and Macintosh Communications Toolbox-based networking.

The company won't have the field to itself, however. Apple has demonstrated prototypes of PCI cards with Pentium and Cyrix 5x86 processors. Orange Micro Inc. of Anaheim, Calif., announced it expects to ship PCI models in May.

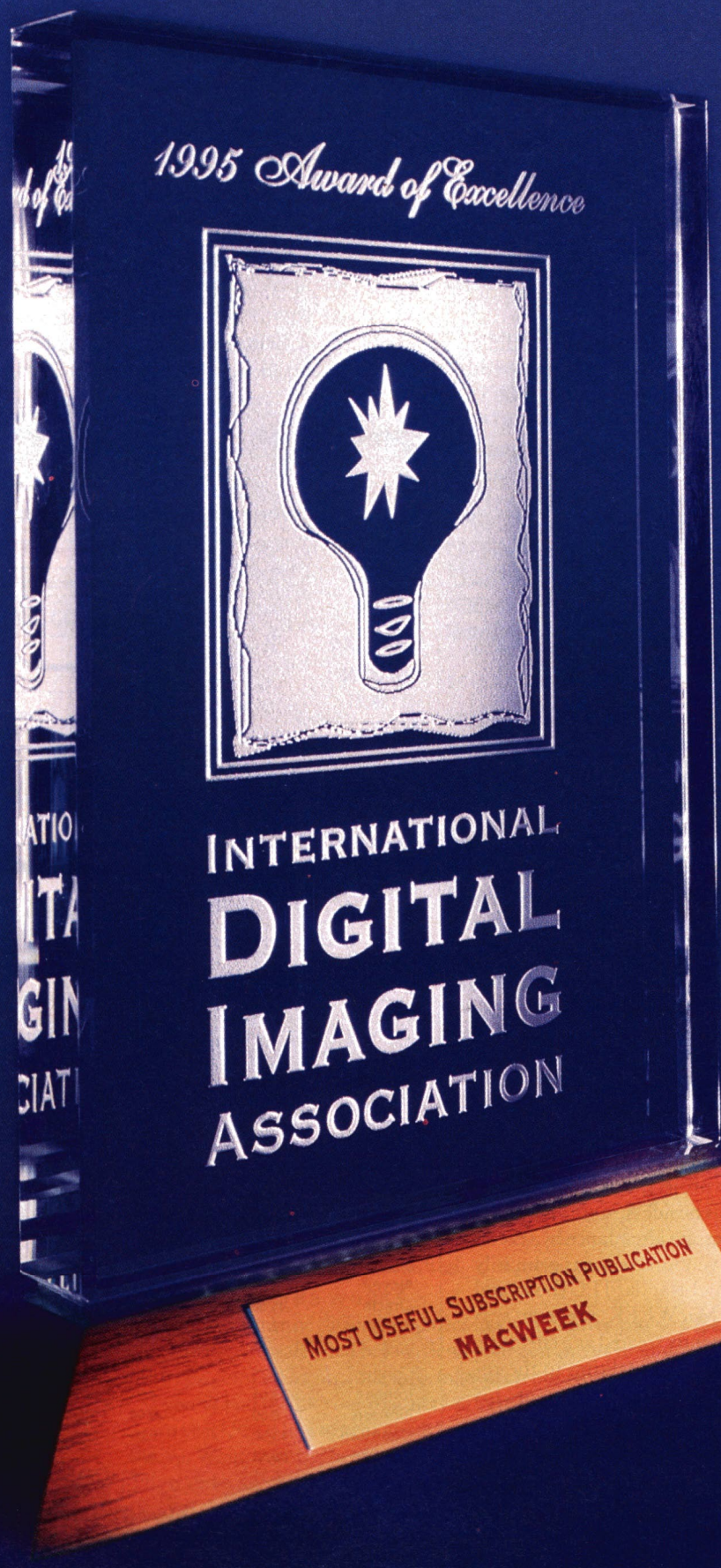
Supplying DOS-compatible cards for the Mac has proven a much larger business than Reply expected, according to Bob Duncan, vice president of engineering. In 1995, 30 percent of the company's $20 million in revenue came from its Mac products; this year it expects revenues of about $30 million, 60 percent of which will be Mac-derived. Ninety percent of the company's engineering expenditures are now aimed at the Mac, Duncan said.

In other news, the company recently released an upgrade kit for earlier DOS cards from Reply and Apple. The $295 kit includes a 100-MHz 5x86 processor.

Reply Corp. of San Jose, Calif., is at (408) 942-4804 or (800) 955-5295; fax (408) 942-4897; info@reply.com; http://www.reply.com/. □

We must be doing

SOMETHING RIGHT!



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THANK YOU, MEMBERS OF THE INTERNATIONAL DIGITAL IMAGING ASSOCIATION, FOR HONORING US *thrice.*

MacWEEK

N+I

From Page 1

were 16- and 32-bit Windows and MS-DOS client versions.

Microsoft said a 680x0 Macintosh version is in beta and will ship this summer; Microsoft officials gave no date for a native Power Mac version. The company said a Unix version is due in the fall.

Exchange comprises e-mail, group-scheduling, discussion and document-sharing capabilities and is positioned as an enterprisewide messaging system.

"Exchange, in our environment, is going to make life much easier," said Joe Boyle, a systems analyst for the Brevard County School District in Florida. Boyle, who oversees 80 schools and expects to have as many as 6,000 Mac and Windows clients under Exchange, is considering going ahead with the beta Mac software, not waiting for the final version.

Immediately following Gates' presentation, Bob Frankenberg, CEO of Orem, Utah-based Novell Inc., gave the opening day's second keynote address. He used NetWare Directory Services, NetWare Mobile and NetWare Connect Services to show how users can collaborate on documents inside a secure intranet.

Internet and intranet wares were not restricted to keynote sessions. On the show floor, Cisco Systems Inc. unveiled its Cisco-Advantage family of products. The suite will include Web server load-balancing software, an Internet Protocol-to-IPX translation gateway and security software.

The marriage of routing and switching was evident at N+I. For example, Hughes Network Systems Inc. introduced Streaming technology, which the company said will unite switching and routing to give users more efficient data handling across a WAN.

Old-hand Mac networking companies also unveiled new devices at the Las Vegas Convention Center last week. Asanté Technologies Inc. took the wraps off its ReadySwitch 5140 FX, a four-port, switched 10BASE T device with one Fast Ethernet fiber-optic link.

Dayna Communications Inc. debuted its BlueStreak Fast EtherPrint 10/100 box, which will connect a 10BASE T device to a 100BASE T network. Dayna also said it plans to ship this spring a dual-speed 10/100BASE T networking card for processor direct slot-based Macs.

InterCon Systems Corp. said all of its products will be Open Transport-native by the end of the second quarter.

Switch buyers will have even more choices from the crop of new ones announced here. Scorpio Communications Inc., for example, rolled out its Stinger 5 Asynchronous Transfer Mode (ATM) switching chassis. Users will be able to configure the device with as many as 112 ports that will run from 25 to 622 Mbps.

Madge Networks Inc. showed its Madge Collage 530, which will switch 16 Ethernet ports and one 155-Mbps ATM port; the Collage 540 will have 10 token-ring ports and an ATM port; the Collage 740 switch, intended for the backbone, will come with 16 155-Mbps ATM ports.

NBase Communications Inc. introduced its MegaSwitch II, an eight-port Ethernet switch with two slots for adding Fast Ethernet and ATM modules.

The networking giants attracted plenty of conventioneers. Bay Networks Inc. announced a group of new modules for its Systems 5000 chassis, including an ATM virtual network router, a 10/100BASE T switch, and LAN and WAN router modules.

3Com Corp. said it will begin offering its users free assistance in setting up ISDN (Integrated Services Digital Network) lines in home, small-business and branch office sites. The company also said it will add the AccessBuilder 7000 Access Concentrator to its family of remote-access products.

Cabletron System Inc. announced a suite of management tools for switched networks. The company said its SecureFast Virtual Network Services software will bring some of the features of ATM to packet-based networks, including the capability to create virtual connections between users. □

A bit player in the Las Vegas show

Reporter's Notebook

"This is Comdex for networking, and it is scaring me," said an overwhelmed conventioneer midway through the second day of Networld+Interop 96. Although last week's networking show didn't match the size of the Las Vegas edition of Comdex, it did sprawl through the Las Vegas Convention Center and into the nearby Las Vegas Hilton.

"I've been coming to N+I a while, and I'm always amazed it takes this many companies to network computers," another show goer said.

Among the demonstrations that wowed the N+I crowd was Fore Systems Inc.'s application of ATM technology. Surgeons at Pittsburgh's Allegheny Health, Education and Research Foundation used live video across a statewide Fore Systems ATM network to show surgical techniques to remote colleagues. The brain surgery shown at Fore Systems' booth attracted gawkers three deep, each with a strong stomach as well as an appreciation for high-speed networks.

An unlikely exhibitor at N+I was Electronics for Imaging Inc. The RIP maker was touting its extensive network capabilities for remote scanning and printing. Attendees flocked to EFI's booth not only for the colorful demos of Fiery XJ technology but also for some of the better giveaways at the show: a pack of gum, an RX 7 Matchbox model car and a cap to ward off the Nevada sunshine.

At the Hilton, Interop Dot-Com, an Internet-related companion to N+I, featured nearly 70 companies. Softbank Exposition and Conference Co., which hosts N+I (and shares a parent company with MacWEEK), said it plans to spin off the new Internet show later this year.

Although Apple did not have a booth at the show, plenty of Mac users were among the convention goers.

"Apple has these technologies," said one attendee, pointing to videoconferencing demonstrations. "They need to get these projects out. Everyone there is working on a science project, but this is a cutthroat business."

Despite attendance by several Mac vendors, this was primarily an Intel-standard PC show, and one MacWEEK reporter was frequently treated as a curiosity. A show goer talking to the reporter glanced down at his badge, then looked up at him as if he had mad cow disease. "I think I better go," she said, scurrying away. — *By Clifford Colby and Mark Hall*

Apple sells CPU plant: Owner to supply PBs

By James Staten

Aiming to reduce production and inventory-carrying costs, Apple last week sold its Fountain, Colo., manufacturing facility to SCI Systems Inc., a multinational electronics manufacturer.

The 360,000 square foot Fountain facility manufactures most of the PowerBooks, some desktop models and subassemblies. It has been in operation since 1991.

The Huntsville, Ala.-based SCI agreed to continue building Apple products at the facility for three years and to extend job offers to nearly all the 1,100 Fountain employees.

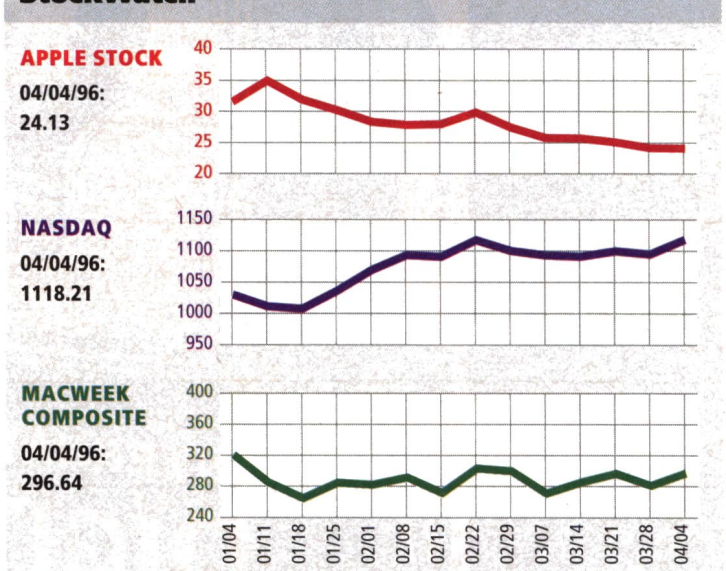
"This is great. That accounts for 1,100 of the 1,300 employees Apple said it planned to lay off," said Pieter Hartsook, editor of The Hartsook Letter, an industry newsletter based in Alameda, Calif. He said he favors this action over wholesale cuts in the work force to get manufacturing costs down.

Apple said SCI will purchase all existing inventory and equipment at the facility for an undisclosed sum. Assuming regulatory approvals are given, SCI will take over the plant in June.

Kwok Lau, Apple vice president of Pacific operations, said, "This was a move from fixed costs to more-variable costs and improved asset utilization within Apple."

Apple said it has contracted with SCI for manufacturing in the past but never on this scale. SCI has struck similar plant-takeover deals with other computer manufacturers, including Digital Equipment Co., Hewlett-Packard Co. and IBM Corp. □

StockWatch



	04.04.96 CLOSE	WEEKLY CHANGE
Apple	24.13	-0.06
MacWEEK Composite*	296.64	16.25
SOFTWARE DEVELOPERS		
Adobe	32.50	0.63
Caere	8.75	0.75
CE Software	2.63	0.13
Fractal	12.50	0.25
Graphsoft	6.75	0.38
Insignia	6.00	-0.13
Intuit	47.00	1.50
Macromedia	45.13	1.75
Microsoft	104.38	2.13
Novell	13.50	0.25
Oracle	45.50	-2.63
Symantec	12.13	-0.63
STORAGE		
Conner	25.75	0.00
Iomega	32.63	6.81
Pinnacle	8.00	0.06
Quantum	18.50	0.06
Seagate	58.50	4.88
SyQuest	6.31	1.19

	04.04.96 CLOSE	WEEKLY CHANGE
PERIPHERALS VENDORS		
AmeriQuest	0.81	-0.06
Asanté	6.25	0.25
Focus	2.25	-0.44
Global Village	14.88	-0.88
HP	96.38	3.13
QMS	5.13	0.50
Radius	2.56	0.56
Shiva	98.50	9.75
Tektronix	34.88	1.00
Truevision	8.00	0.69
DISTRIBUTORS		
CompUSA	55.50	2.25
IE	6.38	1.06
Merisel	2.63	0.19
Tech Data	17.00	0.38
INDUSTRY INDICATORS		
Compaq	37.63	-0.38
IBM	117.75	7.88
Intel	59.25	2.88
Motorola	51.88	-1.63
SGI	25.25	0.50
NASDAQ	1118.21	23.38

**The MacWEEK Composite is calculated by adding the stock prices of the following companies: Apple, Adobe, Asanté, Caere, CE Software, Global Village, Intuit, Macromedia, Radius, Shiva, SyQuest and Truevision. Source: Nordby International Inc.*

On-line this week

ZDNet Apple premium pricing?

Will Apple return to charging slightly premium pricing? In an anonymous posting to the MacWay mailing list, a discussion with Apple CEO Gilbert Amelio is revealed. According to the posting, Amelio plans to turn the Mac into the "MagLite" of computers. As opposed to the "el cheapo flashlight," Amelio's MagLite model will attract customers who prefer a premium computer at a higher price. Will this really happen? Read it on-line and send us your opinion at http://www.zdnet.com/macweek/mw_1014/news_macway.html.

More Navigator/Explorer plug-ins

Download all the latest Netscape/Explorer plug-ins, including the new mBED plug-in featured in this week's GA section, at http:// www.zdnet.com/macweek/plugins.html.

Where to find us on-line

On CompuServe, the MacWEEK Forum is at go zmc:macweek and the MacWEEK News menu is at go zmc:mwnews. On the Web, visit us at http://www.zdnet.com/macweek/.

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Products in this issue

COMPUTER-AIDED DESIGN
Ashlar DesignReality 26
Yonowat Amapi 26

COMPUTERS & SYSTEM SOFTWARE
Apple Open Transport 1.1 16
Apple Performa 74
Apple Power Mac 7200/75, 8500/120 4
Apple Power Mac 7500 1
Apple System 7.5 Update 2.0 4, 16, 22, 31
Apple System 7.5.3 16, 31, 35

DATABASES & DATABASE TOOLS
Visigenic OpenChannel 19

GRAPHICS SOFTWARE
Adobe Photoshop, PhotoDeluxe 35, 36
Fractal Design Dabbler 2 35
Lari LightningDraw GX 10
Live Picture Live Picture 35
MetaTools Kai's Power Goo 4
MicroFrontier Color It! 3.0 35
Microspot PhotoFix 35
Specular TextureScape 2.0 32
Storm EasyPhoto, EasyPhoto Reader 35
Technosystems Chagall 35

MULTIMEDIA
Macromedia Key Grip 74
mFactory mTropolis 1.1 10
Specular BackBurner 3.1, Infini D 3.2 10
Wired Butane II 10

NETWORKS
Asanté ReadySwitch 5140 FX 1
Bay Networks Systems 5000 chassis 1
Breeze WB-10D 16
Cabletron SecureFast Virtual Network Services 1
Cisco CiscoAdvantage 1
Dayna 10/100BASE T networking card, BlueStreak Fast EtherPrint 10/100 box 1
Madge Madge Collage 530, 540, 740 1
NBase MegaSwitch II 1
Novell NetWare Directory Services, NetWare Mobile, NetWare Connect Services 1
Reply NetPack 1
Sat-Sagem TheWave 19
Scorpio Stinger 5 ATM switching chassis 1
3Com AccessBuilder 7000 Access Concentrator 1

NEWTON
Apple Newton 1

ON-LINE COMMUNICATIONS
Apple eWorld 74
Banyan BeyondMail for Mac 25
Bien SurfReport 1.0 16
CE QuickMail 25
Imagina Newstand 16
Intelligence at Large MovieStar Maker 4
Kitchen Sink ServerStat 1.2 16
Lotus cc:Mail 3.0 25
mBED mBED plug-in 10
Microsoft Exchange 1
Sat-Sagem Meet-Me Light, Meet-Me PCI 19
WEST WEST Desktop Education Server 1.1 6

ORGANIZATIONAL TOOLS
Software Solutions Territory Manager 2.5 8

PRINTERS & PRINTING TOOLS
Electronics for Imaging Fiery XJ 72

PRODUCTIVITY APPS
Claris ClarisWorks 4.0v4 6

PROGRAMMING/ DEVELOPMENT TOOLS
Apple Apple Game Sprockets SDK 23
Symantec Symantec C++ 8.0 for Power Mac Release 5 16

SCIENTIFIC TOOLS
DesAcc ClipboardAccess 8

STORAGE
Iomega Jaz drive, JazJet 1
Iomega Zip drive 1, 3
Pioneer Super 10X 6
SyQuest EZ135 3
SyQuest SyJet 1, 3

SYSTEM ENHANCEMENTS
Daystar Turbo 601 board 4
Reply DOS on Power Mac PCI, upgrade kit for DOS cards 1

UTILITIES
CE QuicKeys 3.5 6

Looking ahead

NEXT WEEK

In a GA Extra focusing on scanners, we look at midrange flatbed scanners and how these under-$10,000 devices are matching the productivity of their more expensive high-end pre-press cousins.

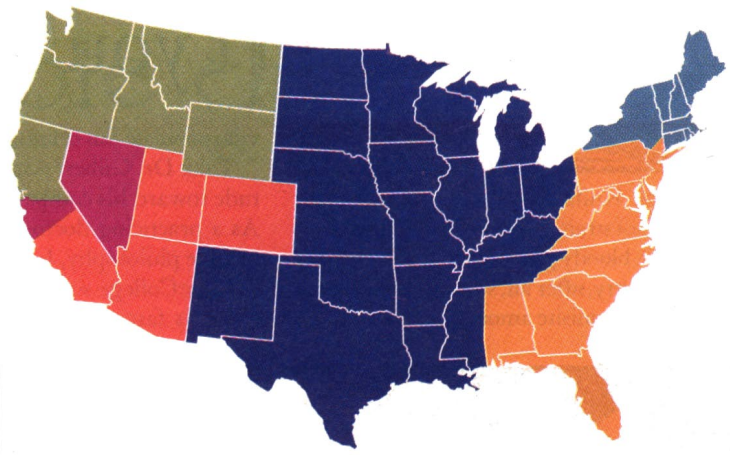
SOLUTIONS IN THE WORKS

We want to know the difficulties, successes and failures you've experienced in the areas defined below. Send your comments to solutions@macweek.com. Please include information on how to contact you.

- If you've had to link your Mac networks to mainframes in the past two years, we'd like to hear about your experiences, positive and negative. What were the best solutions? What didn't work at all? And, how did your users react?

REVIEWS IN THE WORKS

- Insignia's SoftWindows 95
- Macromedia Xres 2.0 vs. Live Picture 2.5
- CE's WebArranger 2.0
- McAfee's VirusScan



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[2] Includes New York metropolitan area

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[4] Includes San Francisco Bay Area south of the San Mateo Bridge to San Luis Obispo

[5] Includes Southern California south of San Luis Obispo, Arizona, Utah and Colorado

Advertiser Index

Adaptec 9
Agfa 8
APS Technologies 38-39
ClubMac 44-47
Corel 76
CRA 43
Data Translation 18-19
Dayna 13
Direct Connections 52
DirecTech 48
EarthLink Network 75
Farallon 5
Focus Enhancements 12
FWB 11
Graphsoft 74
La Cie 40-41
The LLB Co. 50-51
Lotus 17
MAC Xtra 49
Macromedia 6-7
MacSale Intl. 59
MacTemps 27
Mega Drive Systems 29
Micro Products Distributors 58
Nikon 24
Nynex 28
Pinnacle Micro 2
Power Computing 14-15
ProDirect 42
Shreve Systems 62, 63
Symantec 30-33
SyQuest 26
Tahoe Peripherals 54
Texas Instruments 37
Viewsonic 20-21
VisionTek 34

Wouldn't you like to be a Dr. too?

Like Blanche Dubois in "A Streetcar Named Desire," the Knife has always relied on the kindness of strangers. Fortunately, this credo fits like a bloody glove when it comes to the Mac industry; after all, strangeness is practically a prerequisite among those luminaries who populate this column's pantheon.

Take Dr. Gilbert Amelio's bipolar attitude toward his company's Performa line. As a practicing doctor himself (Ph.D. in marine philosophy, Laguna Honda Community College surf P.E. class of '82), the Knife is fascinated by the schizophrenic signals coming out of Cupertino about Apple's consumer Macs.

Given the patient's obviously deep-seated conflict about whether to keep the Performas in the family or farm them out to the tender mercies of a new cloning partner, Dr. Knife is hesitant to make a diagnosis. However, he is intrigued by the fact that this gossip coincides with renewed rumors that Apple and IBM are on the verge of inking a licensing deal.

According to this latest spate of speculation, IBM is considering replacing OS/2 with the Mac OS on its — insert dramatic pause here — *consumer models.* While the good doctor prescribes at least one grain of salt vis à vis these rumors, he will continue to monitor the Performa's vital signs carefully over the next month or so.

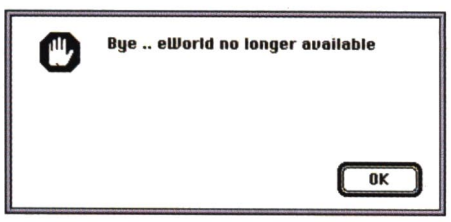
Havin' my baby

Besides his obvious talents in the field of corporate psychology, Dr. Knife is also a past master of the art of midwifery. In this capacity, medical ethics require him to roll back the due date for Key Grip, Macromedia's precious bundle of video-editing software. Readers of these pages will recall that your faithful physician last week suggested the first stirrings would be heard at this month's NAB conference. In fact, Macromedia won't be showing until later this year and probably won't deliver before Macworld San Francisco next January.

Nevertheless, the infant's vital signs are strong; as a matter of fact, Macromedia is rumored to have offered proud papa Dr. Randy Ubillos a hefty (seven figures) bonus to be paid when he brings Key Grip to term.

http://www.grim_reaper.com

To paraphrase The Byrds (who were in turn paraphrasing Ecclesiastes): For every product, turn, turn, turn, there is a season. For every application he sees a-bornin', Dr. Knife must face the inevitable demise of another old standby. In this case, he is compelled to mark the passing of everybody's favorite on-line ghost town, eWorld. One of Dr. Knife's more ghoulish sources waited up until midnight on March 31 to document the precise moment when Apple's beleaguered service passed beyond this vale of tears:



Today, Cupertino; tomorrow ...

Meanwhile, back among the living: Another member of Apple's medical fraternity, Dr. Larry Tesler, is planning a major face lift for Earth Day, that dowdy, old event obsessed with the environment and other trivial pursuits.

According to Dr. Knife's colleagues in the healing arts, Dr. Tesler has obtained Dr. Amelio's blessing to rechristen the April 22 event Net Day; that's when Apple will roll out its fabled Internet strategy, long thought apocryphal. Given the company's modest standing in the on-line ecosystem, this show of bravado is well-nigh inspirational. □

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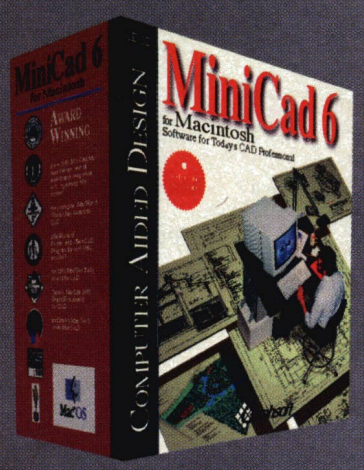

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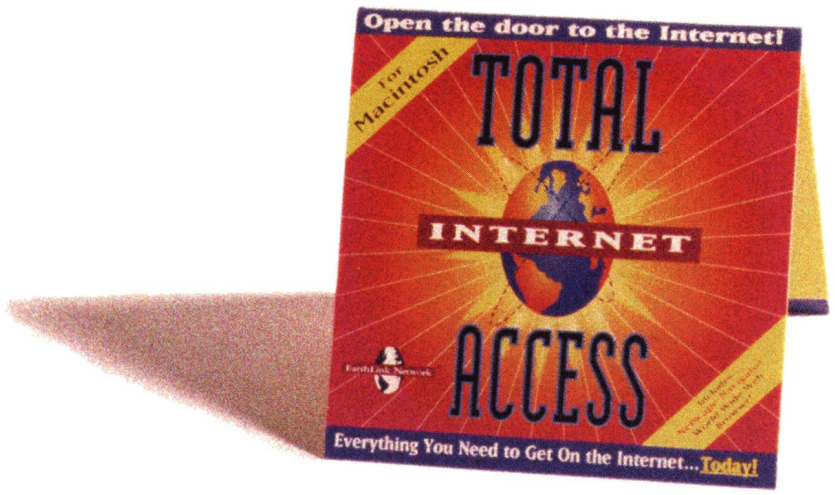

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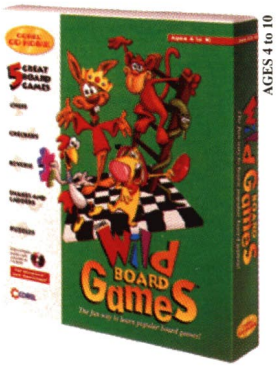

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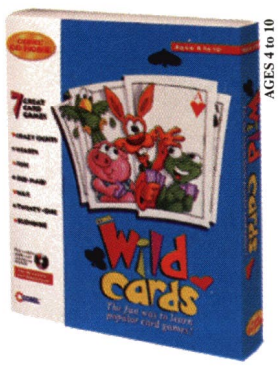

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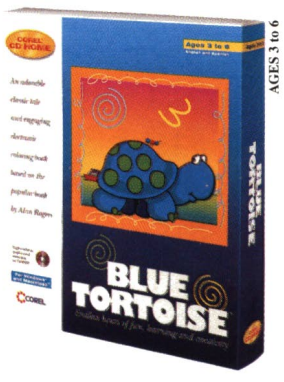

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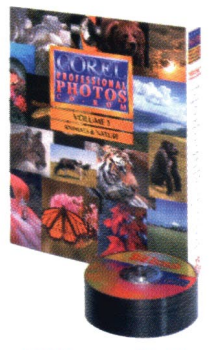

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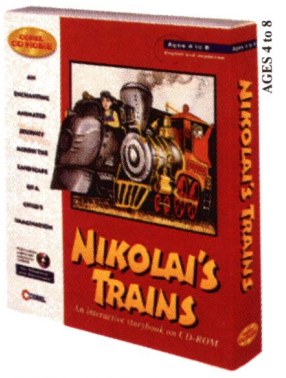

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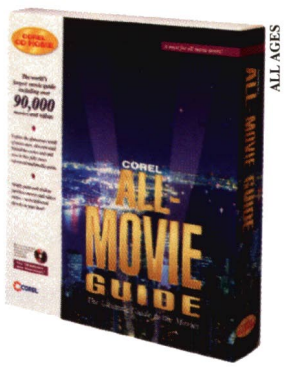

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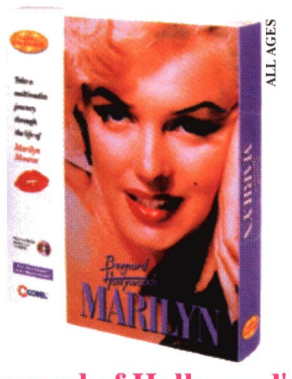

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